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The photochemical behavior of mixtures of selected sulfur containing species, hydrocarbons, and nitrogen oxides was examined in outdoor smog chambers. Sulfur dioxide, H_2S, CH_3SH, COS, and thiophene are the sulfur species tested. A surrogate ambient hydrocarbon mixture comprised of 25 percent propene and 75 percent butane known as the EKMA mix was selected. An experimental matrix was designed where initial EKMA mix concentrations ranged from 0.0 to 2.0 ppmC, initial NO_x concentrations ranged from 0.0 to 0.4 ppm, resulting in initial HC/NO_x ratios of 0.to 40. The impact of the sulfur species on the behavior of the EKMA Mix-NO_x system was examined by conducting experiments at various points on the matrix with and without 1 ppm of each sulfur species. A total of 172 single-chamber experiments was conducted over 43 test days. The experimental results were analyzed to determine the impact of each test sulfur species on the production of ozone, SO_2 (where appropriate), and particulate sulfur. In selected cases, the influence of each test species on the average hydroxyl radical concentration was examined.

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ATMOSPHERIC CHEMISTRY OF SELECTED SULFUR-CONTAINING COMPOUNDS
Outdoor Smog Chamber Study—Phase 2

by

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ABSTRACT

The photochemical behavior of mixtures of selected sulfur species, hydrocarbons, and nitrogen oxides was examined under atmospheric conditions simulated in outdoor smog chambers. Sulfur dioxide, H_2S, CH_3SH, COS, and thiophene are the sulfur species that were tested. A surrogate ambient nonmethane hydrocarbon mixture (known as the EKMA Mix) was selected. This hydrocarbon mixture was comprised of 25 percent propene and 75 percent butane on a carbon basis. A 5 by 5 experimental matrix was designed, where initial EKMA Mix concentrations ranged from 0.0 to 2.0 ppmC, initial NO_x concentrations ranged from 0.0 to 0.4 ppm (20 percent NO_2), and the finite initial HC/NO_x ratios ranged from 0 to 40 ppmC/ppm. The photochemical behavior of mixtures of a selected sulfur species, the EKMA Mix, and NO_x was examined by conducting experiments at various points on the matrix both with and without 1 ppm of each sulfur species. A total of 172 single-chamber experiments was conducted over 43 test days during 1978 and 1979.

The experimental results were analyzed to determine the impact of the presence of each test species on the production of ozone, SO_2, and particulate sulfur. In selected cases, the influence of the presence of each test species on the calculated average OH concentration was also examined. Upper limit values of the rate constants for the reactions of OH with H_2S, with thiophene, and with CH_3SH were estimated.

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These individuals are gratefully acknowledged for their efforts in bringing this project to a successful conclusion.

SECTION 1
INTRODUCTION

SCOPE AND OBJECTIVES

During the next several decades, the use of coal, shale oil and other fossil fuels is expected to increase in the United States to satisfy growing domestic energy needs. Many fossil fuels are dirty, bulky, and difficult to transport, and have low heat content in their raw, natural states. To make these raw fuels more acceptable, fuel conversion processes are being planned and will soon be producing clean, high-energy gas, solid, and liquid synthetic fuels. Operations such as coal gasification and liquefaction, shale oil production, and petroleum refining will assume an increased role in future energy production.

Fuel conversion facilities are potential sources of atmospheric emissions. Contaminants such as mineral matter and sulfur-, nitrogen-, and oxygen-containing compounds are removed and transformed during the processing of raw fuels. Emissions of compounds derived from fuel contaminants are anticipated. In addition, emissions of species from the processing operations themselves are expected to be encountered. These atmospheric emissions may include not only criteria pollutants such as SO_x, NO_x, CO, and hydrocarbons, but also other compounds not previously considered from either the toxic or ozone-generative viewpoints. Identification of the emitted species will enable EPA to assess the impact of synthetic-fuels processing on air quality.

The objective of the present investigation is to conduct outdoor smog chamber studies of the atmospheric chemistry of sulfur-containing chemical species in the presence of hydrocarbons, nitrogen oxides, and sunlight. The sulfur compounds chosen for testing are expected to be present in emissions from fuel conversion facilities.

BACKGROUND

Emissions From Fuel Conversion Facilities

Fuel conversion technology is in the early stages of development. The identity and emissions rates of species emitted by fuel conversion processes, therefore, are poorly defined. A review of emissions from emerging energy industries has been conducted by RTI under EPA sponsorship (1). In this review, a broad spectrum of sulfur-containing compounds, nitrogen-containing compounds, and hydrocarbons was identified from reported analyses of intermediate process streams and final products. The extent to which these species will be released to the atmosphere depends to a large degree on currently undefined processing details. Current estimates are based on engineering process flow diagrams, design material balances, and pilot plant results. Emissions measurements are needed to supplement and verify these estimates.

Coal gasification is a typical fuels conversion process. As with other synthetic fuels processes, only bench- and pilot-scale facilities are currently in operation in the United States. Although several modern commercial facilities are operational outside of the U.S., detailed resolution of atmospheric emissions from these facilities is not currently available.

While it is recognized that processes downstream of the gasifier will undoubtedly ameliorate emissions, analyses of the raw effluent from bench- and pilot-scale gasification facilities should provide rough estimates of the compounds that could potentially be emitted. Typical analyses of raw gas from noncommercial gasifiers have been compiled and are presented in Table 1.

Raw gas analyses from the Synthane and Bureau of Mines Fixed Bed processes are presented. In addition, the Research Triangle Institute, through EPA Grant No. 1394 (Pollutants from Synthetic Fuels Production), is conducting a laboratory study to identify emissions from a small batch-fed gasifier. Analyses from two experiments conducted in the RTI gasifier are also presented in Table 1. The raw gas composition was determined from gas samples that had been collected in glass bulbs. Raw gas samples were also collected on Tenax and XAD sorbents for subsequent gas chromatographic/mass spectroscopic (GC/MS) analyses. Compounds identified in samples collected on sorbents are presented in Table 2. Although more comprehensive quantitative analyses of the raw gas are not available at this time, the analyses presented are sufficient to

TABLE 1. ANALYSES OF RAW GAS FROM NONCOMMERCIAL GASIFICATION FACILITIES

Process	Synthane	Bureau of Mines	RTI[a]		RTI[a]	
Coal	Illinois No. 6	Western Ky.	Illinois No. 6		Illinois No. 6	
Major Species (Volume %)			b	c	d	e
N_2	f	47.6	22.6	26.9	58.8	21.8
CO	12.3	20.6	8.6	16.4	2.8	7.0
CO_2	35.3	5.9	5.0	17.0	3.3	17.9
H_2	35.4	13.8	32.6	36.0	8.6	46.8
CH_4	13.9	2.8	22.7	2.4	15.4	7.6
H_2O	g	8.4	g	g	g	g
Minor Species (ppm)						
C_2H_6	15,600	NR[h]	8,736	28	25,100	270
C_2H_4	NR	NR	4,836	5	5,000	96
C_3H_8	NR	NR	780	0.0	7,900	120
C_3H_6	NR	NR	1,036	0.0	5,600	52
iC_4H_{10}	NR	NR	50	0.0	600	7
nC_4H_{10}	NR	NR	82	0.0	1,200	<1
SO_2	10	NR	0.0	0.0	6	5
H_2S	16,200	6,000	18,986	3,979	29,400	5,900
COS	300	1,000	45	30	100	44
CS_2	NR	NR	39	0.0	27	<1
CH_3SH	30	NR	9	0.0	45	10
C_2H_5SH	NR	NR	0.0	0.0	69	<3
Thiophene	40	NR	576	0.0	151	<5
Methyl Thiophene	10	NR	NR	NR	NR	NR
Dimethyl Thiophene	10	NR	NR	NR	NR	NR
NO	NR	NR	NR	NR	NR	NR
NH_3	NR	2,500	NR	NR	NR	NR
HCN	<10	NR	NR	NR	NR	NR
Benzene	220	NR	NR	NR	NR	NR
Toluene	50	NR	NR	NR	NR	NR
Xylenes	20	NR	NR	NR	NR	NR

[a]Because of the batch-type operation, data from the RTI gasifier are not necessarily representative of commercial facilities.

[b]Test No. 80131I16B2C after 20 minutes; temperature 518° C.

[c]Test No. 80131I16B2C after 90 minutes, temperature 926° C.

[d]Test No. 6A after 18 minutes; temperature 601° C.

[e]Test No. 6A after 112 minutes; temperature 778° C.

[f]Nitrogen-free analysis.

[g]Water-free analysis.

[h]NR = not reported

TABLE 2. COMPOUNDS IDENTIFIED IN RAW GAS FROM RTI GASIFICATION EXPERIMENT.

Chromatographic Peak No.	Compound	µg/l	Chromatographic Peak No.	Compound	µg/l
1	CO_2		21b	C_3-benzene isomer	
1a	carbonyl sulphide		21c	C_3-thiophene isomer	
2	sulfur dioxide		22	C_3-benzene isomer	
2a	butene isomer		22a	C_3-thiophene isomer	
2b	(Freon 11) (BKG)		23	benzofuran + C_3-benzene	
4	acetone				
4a	furan (tent)		23a	sulfur compound or unknown	
4b	C_4H_8O isomer (tent)		24	n-decane	
4c	$C_4H_{10}O$ isomer		24a	C_3-benzene + C_3H_8-benzene	
5	dichloromethane (BKG)		24b	isomers	
5a	carbon disulfide		24c	saturated hydrocarbon	
5b	C_3H_6 (tent)		25	indane	
5c	C_7H_{16} isomer		25a	cresol isomer	
5d	C_8H_{18} isomer		26	indene	
6	methyl ethyl ketone		27	acetophenone	
7	hexafluorobenzene		28	cresol isomer	
7a	C_6H_{14} isomer		28a	C_4-benzene isomer	
8	perfluorotoluene		28b	C_4-benzene isomer	
9	benzene	60	28c	C_4H_7-benzene isomer	
9a	thiophene	2.2	28d	methylbenzofuran isomer	
10	acetic acid	9	29	methylbenzofuran isomer	
11	n-heptane		29a	C_4-benzene isomer	
12	toluene	872	29b	C_2-phenol isomer	
12a	methylthiophene isomer	4	29c	C_4H_7-benzene	
12b	C_8H_{16} isomer		30	methylindene isomer	
13	n-octane		31	methylindene + silane compound	
14	silane compound				
15	ethylbenzene	1	31a	saturated hydrocarbon	
15a	ethylthiophene	3	32	naphthalene	
16	xylene isomer	3	32a	benzothiophene	
16a	dimethylthiophene	2.6	33	β-methylnaphthalene	
16c	dimethylthiophene isomer	0.7	33a	methyl benzothiophene	
17	C_8H_8 isomer		34	α-methylnaphthalene	
18	xylene isomer	1.2	34a	$C_{12}H_{10}$ isomer (tent)	
18a	dimethylthiophene isomer	0.7	35	$C_{14}H_{30}$ isomer	
19	n-nonane		35a	$C_{12}H_{10}$ isomer	
19a	C_3-benzene isomer				
19b	hydrocarbon				
20	benzaldehyde	1.3			
20a	C_3-benzene isomer (tent)				
20b	C_3-thiophene isomer				
20c	C_3-benzene isomer				
21	C_3-benzene isomer	14			
21a	phenol				

BKG = background peak

emphasize the dominant aromatic character of the high molecular weight species that comprise the raw gas.

Previous Smog Chamber Investigations of Emissions

Many atmospheric chemistry studies conducted to date have addressed the photochemistry of hydrocarbon-nitrogen oxides systems during exposure to artificial or natural irradiation. Smog chamber studies have emphasized the ozone production of such systems. Based on the data in Table 1, sulfur-containing compounds as well as hydrocarbons are anticipated emissions from fuel-conversion processes. Prior to 1975 very little work had been conducted on the atmospheric chemistry of sulfur compounds, except for SO_2. The present study is the third of a series of smog chamber investigations begun in 1975 at the Research Triangle Institute and conducted under EPA sponsorship (2,3). These studies have been directed at the examination of the atmospheric chemistry of potential emissions from fuel conversion facilities.

Findings of the Initial RTI Investigation--

Based on a search of the literature (1), many potential emissons from fuel-conversion facilities were identified and tested in the initial study (2). The compounds selected for testing were: furan, pyrrole, thiophene, methanethiol, methyl sulfide, methyl disulfide, carbonyl sulfide, cyclopentadiene, 2-methyl furan, 2,5-dimethyl furan, 2-methyl thiophene, toluene, ethylbenzene, ortho-xylene, meta-xylene, para-xylene, and propene. Propene was included as a control.

Screening tests were performed to assess the ozone-forming potential of each of the above compounds at two initial HC/NO_x ratios, 5 and 20 ppmC/ppm. An ozone concentration of 0.08 ppm was exceeded in at least one of the two test conditions for every compound tested, except carbonyl sulfide and methanethiol. In addition, sulfur dioxide was observed as a product of photo-oxidation of each of the sulfur-containing compounds.

The following six compounds were chosen for additional bag studies and also for multiple-day smog chamber experiments: furan, pyrrole, thiophene, methanethiol, methyl sulfide, and methyl disulfide.

The stability of mixtures of each of the six test compounds in air was evaluated in 125-L bag reactors both in the dark and under irradiation. All six test compounds were relatively stable in the dark, with half-lives of 3

days or longer. Exposure to sunlight enhanced the decay rates of each tested compound, except methyl sulfide. Pyrrole and methyl disulfide exhibited half-lives of less than 1 day. Considerable quantities of SO_2 were observed as a product of irradiated air-methyl disulfide mixtures.

The dark-phase reactivity of each of the six test compounds in the presence of O_3 was investigated in bags. Pyrrole and furan reacted rapidly with O_3. The rate constant determined for pyrrole was approximately the same as that determined for propene. Among the sulfur-containing compounds, thiophene was the most reactive with O_3, and the alkyl sulfides were considerably less reactive.

Dark-phase reactivity bag studies for each of the six test compounds were also conducted in the presence of NO_x. These experiments indicated that the test compounds were relatively unreactive with NO_x in the dark.

The behavior of the six test compounds in ozone-potential screening tests indicated that each compound can participate in atmospheric photo-oxidation reactions. Photo-oxidation was indicated to be a major pathway for removal of these compounds from the atmosphere.

Multiple-day experiments simulating both static and transport atmospheric conditions were conducted in the four outdoor smog chambers comprising the RTI Smog Chamber Facility with furan, pyrrole, thiophene, methanethiol, methyl sulfide, methyl disulfide, and the control hydrocarbon, propene. Target initial conditions for these tests were 5.0 ppmC of the test compound and 1.0 ppm NO_x (20 percent NO_2).

On the first day of a static run, thiophene was the slowest of the test compounds and required over 5 hours past dawn to reach NO-NO_2 crossover. The other test compounds required less than 3 hours. The ordering of the times to reach the maximum $[O_3]$ for the test compounds roughly duplicated that for the times to NO-NO_2 crossover. Thiophene, the slowest compound to crossover, achieved $[O_3]_{max}$ after 1500 EST; whereas, the other five compounds reached $[O_3]_{max}$ by 1000 EST. With each of the test compounds, except the slow-reacting thiophene, NO_x was consumed more quickly than with propene.

Each of the sulfur-containing species tested in the chambers produced SO_2 as a product of photo-oxidation on the first day of a static run. Substantial amounts of SO_2 were produced by the alkyl sulfides, whereas thiophene produced the smallest quantities of SO_2 of the sulfur-containing compounds tested in

the chambers. Sulfur dioxide was detected as a reaction product simultaneously with the onset of NO oxidation. Concentration profiles indicate that the largest increase in $[SO_2]$ occurred between the time of NO-NO_2 crossover and the time of $[O_3]_{max}$, with the $[SO_2]_{max}$ occurring at approximately the same time as the $[O_3]_{max}$.

First, second, and third day behavior were compared using net ozone values (ΔO_3).* The open-chain sulfur species produced not only ΔO_3 values of 0.4 to 0.7 ppm on the first day of static runs, but also considerable amounts of ozone on the second and third days. Thiophene, in contrast to the other test compounds, produced more ozone in static runs on both the second and third days than on the first day. In two static experiments with thiophene, a fivefold increase in ΔO_3 was observed from the first to the second day.

Each of the sulfur-containing compounds produced considerable quantities of SO_2 on the first day of a static run; whereas, only thiophene produced significant levels on the second and third days. Of the compounds tested in the chambers, only the slow-reacting sulfur compound thiophene produced significant quantities of <u>both</u> O_3 and SO_2 on the second and third days of multiple-day irradiations.

In dilution runs, the chamber contents were diluted with purified air at a fixed rate starting at 0800 EST on the first day. The dilution rate was chosen so that, after 24 hours of operation, 95 percent of the original chamber contents would be replaced by purified air. Dilution was terminated 24 hours after initiation, and the remaining 2 days of the run were conducted in the static mode. Under dilution conditions thiophene produced a first-day $[O_3]_{max}$ level over five times greater than the value achieved in the corresponding static run. Among the test compounds, however, this was the exception, and in general, dilution resulted in a slight reduction of the first-day $[O_3]_{max}$ level.

Under dilution conditions, first-day ΔO_3 levels were larger than the levels produced on the second and third days. This suggests that downwind from sources of the tested compounds, ozone production resulting from emis-

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*Net ozone concentration on any day is the difference between the maximum and minimum concentrations: $\Delta O_3 = [O_3]_{max} - [O_3]_{min}$.

sions of the tested compounds should decrease on days subsequent to that of their release.

Second- and third-day ΔO_3 levels in dilution experiments were generally less than those in static runs. They were never reduced in proportion to the extent of dilution: ΔO_3 levels were generally reduced by less than 40 percent after 95 percent dilution. This finding demonstrates the nonlinear behavior of ozone formation in air parcels which experience dilution.

Dilution reduced $[SO_2]_{max}$ values achieved on the first day by the sulfur-containing species in comparison with static runs. Net SO_2 levels on the second and third days were reduced essentially to zero by dilution. The pronounced reductions of SO_2 levels achieved on each day of the multiple-day dilution runs reflect reactant-limited behavior on the resulting SO_2 formation. This may be contrasted with the nonlinear precursor-product relationship for ozone formation.

The results of the study suggest that, on a carbon basis, organosulfur compounds have an ozone-generative potential similar to that of hydrocarbons that are normally recognized as ozone precursors. The research has also shown that organosulfur compounds in the presence of NO_x and sunlight are precursors of SO_2.

Findings of the Second RTI Investigation--

In the second RTI study, selected aspects of the chemical behavior of 14 sulfur-containing compounds were investigated under atmospheric conditions simulated in outdoor smog chambers (3). A major goal was to examine the ozone production of each test compound under various initial conditions.

In addition to propene, which was employed as a control, the following compounds were examined: hydrogen sulfide, carbonyl sulfide, carbon disulfide, methanethiol, methyl sulfide, methyl disulfide, methyl ethyl sulfide, ethanethiol, ethyl sulfide, ethyl disulfide, thiophene, 2-methylthiophene, 3-methylthiophene, and 2,5-dimethylthiophene. Two-day experiments simulating static atmospheric conditions were conducted simultaneously in four outdoor smog chambers. Target initial concentrations of 2.0 ppmC of the test compound and 0.1, 0.2, 0.5, and 1.0 ppm NO_x (20 percent NO_2) were employed. Thus, each test compound was examined simultaneously at target initial compound/NO_x ratios of 20, 10, 4, and 2 ppmC/ppm.

In most cases, the photochemical behavior of irradiated mixtures of NO_x and individual test species was similar in various respects to that of irradiated mixtures of NO_x and hydrocarbons such as propene. Except for experiments conducted with H_2S and COS, the presence of the test species resulted in more rapid conversion of NO to NO_2 than would have occurred in its absence. For the thiols, organic sulfides, and organic disulfides, conversion from NO to NO_2 was extremely rapid and rather insensitive to the initial conditions employed. The organic disulfides displayed the most rapid conversion of NO to NO_2 of the 14 species tested. For carbon disulfide and thiophene, the times to crossover were highly sensitive to initial conditions and, in one case for thiophene, crossover did not occur until the second day. A seasonal influence on the times to crossover was exhibited in the propene-NO_x experiments.

Except for the experiments conducted with H_2S and COS, substantial amounts of ozone accumulated during at least one of the experiments conducted with each test compound. The maximum ozone concentrations were rather sensitive to initial conditions, and the largest $[O_3]_{max}$ generated by tested sulfur species occurred with the CH_3SCH_3-NO_x system. Among the test species, the thiols, organic sulfides, and organic disulfides had the largest ozone-production potential, and produced their largest maximum ozone concentrations at low initial HC/NO_x ratios. The largest $[O_3]_{max}$ for the thiols occurred at the target HC/NO_x ratio of 4. Same-day experiments suggest that methanethiol has a larger first-day ozone-generative potential than ethanethiol. For organic sulfides and disulfides, the $[O_3]_{max}$ decreased sharply as the target HC/NO_x ratio was increased from 2 to 20.

In general, the thiophenes produced less ozone than the previously mentioned thiols, organic sulfides, and organic disulfides. Thiophene and 2-methylthiophene produced their largest $[O_3]_{max}$ at the target HC/NO_x ratio of 10, while 3-methylthiophene and 2,5-dimethylthiophene produced their largest $[O_3]_{max}$ values at the target HC/NO_x ratio of 4. Among the thiophenes, 3-methylthiophene produced the most ozone. The addition of a methyl group onto the heterocyclic thiophene molecule modifies its reactivity as indicated by maximum ozone production. In addition, these results suggest that reactivity is significantly enhanced by the addition of a methyl group at the 3-position in comparison to adding either one or two methyl groups at the 2-position.

The photochemical behavior of irradiated mixtures of NO_x and H_2S was markedly different from that of irradiated mixtures of NO_x and a hydrocarbon such as propene. Hydrogen sulfide did not act to promote the oxidation of NO to NO_2. Instead, the reverse occurred; NO_2 was reduced rapidly to NO, and essentially no ozone accumulated. The results indicate that the apparent reduction of NO_2 to NO in the presence of H_2S involves a photochemical process.

On the first day of the experiments conducted with carbonyl sulfide, very little NO was oxidized to NO_2, and essentially no ozone was produced. In most respects the results from irradiating COS and NO_x were no different from those expected from irradiating NO_x in pure air.

Substantial quantities of ozone accumulated in the experiments conducted with carbon disulfide, but only at the highest HC/NO_x ratio. Carbonyl sulfide was found to be a major product in each of the experiments conducted with CS_2. In addition, COS was observed as a minor product in experiments conducted with nine of the remaining tested sulfur-containing compounds.

Strong seasonal influences on the maximum ozone concentrations were exhibited in the propene-NO_x experiments. Much larger ozone maxima were produced in September, and they were more sensitive to initial conditions than was found in replicate experiments conducted in November. The effect was most pronounced at the target HC/NO_x ratio of 2.

The ratio of product sulfur as particulate to the total accountable reacted sulfur ([TPS] plus [SO_2]) was determined for many of the tested compounds. Generally, these data indicate that the majority of the accountable product sulfur for the tested species existed as SO_2 and that less than 20 percent of accountable product sulfur existed in the particulate phase. Ratios in excess of 0.2 occurred for methanethiol, methyl sulfide, methyl disulfide, and methyl ethyl sulfide.

Dark-phase ozone half-lives were calculated for the first night time period of each experiment. These results suggest the possible presence of undefined ozone-reactive reaction products after the first day's irradiation in the experiments which were conducted with carbon disulfide, the thiols, the organic sulfides, the organic disulfides, and the thiophenes.

The largest second-day net ozone concentration was produced in an experiment conducted with methanethiol; however, net ozone concentrations exceeding 0.2 ppm were also observed in at least one experiment conducted with propene,

with carbon disulfide, with ethanethiol, and with 2,5-dimethylthiophene. Based on the relatively large ranges of net ozone concentrations for these species, second-day ozone production by these compounds was highly sensitive to the (first-day) initial conditions. In contrast, essentially no ozone accumulated on the second day of experiments conducted with H_2S and with COS.

Impetus for Present Study

Based on currently available information, H_2S, COS, CS_2, CH_3SH, C_2H_5SH, thiophenes, and aromatic hydrocarbons may be released within an organic matrix from fuel conversion facilities. The emissions of sulfur species and the composition of the organic matrix accompanying the sulfur species remain to be defined. Raw gas analyses of Table 1 indicate that ethane, ethene, and C_6 to C_8 aromatics may comprise a considerable portion of the organic matrix. Unfortunately, the relative amounts of these constituents are currently unknown. Source tests are required to verify the presence of these species and more importantly to define the concentrations and relative amounts of various species within the effluent from "typical" facilities.

With the ever increasing demand for energy, it is likely that future fuel conversion facilities will be located in areas not totally remote from urban centers. Emissions are therefore expected to become mixed with urban plumes after one or more days of transport. Thus, it is anticipated that emissions unique to fuel-conversion facilities will encounter photochemically reactive organic-nitrogen oxides systems either within the effluents from the fuel-conversion facilities themselves, or through mixing with urban plumes, or both. The reactivity of the organic-NO_x system and the type and amount of the fuel conversion emission species present will strongly influence the photochemical behavior of the resulting mixture.

Although the photochemical behavior of sulfur species and nitrogen oxides was examined in the first two RTI smog chamber investigations, the behavior of mixtures of sulfur species, hydrocarbons, and nitrogen oxides was not considered. For a given type and concentration of a sulfur species, O_3, SO_2, and particulate sulfur production are likely to depend to a large extent on the reactivity of the hydrocarbon-nitrogen oxides system to which the sulfur species is added. The reactivity of this system depends on the initial concentrations and concentration ratio of hydrocarbons and nitrogen oxides. The present study was designed

to explore the photochemical behavior of mixtures of sulfur species, hydrocarbons, and nitrogen oxides by adding a given amount of a sulfur species to each of several mixtures of hydrocarbons and nitrogen oxides. The initial hydrocarbon and nitrogen oxides concentrations were chosen to cover a broad range of reactivity. This was done to permit investigation of a variety of situations that could potentially occur in the atmosphere.

SECTION 2
CONCLUSIONS

The main goal of the current study was to examine the photochemical behavior of mixtures of selected sulfur species, hydrocarbons, and nitrogen oxides. Sulfur dioxide, H_2S, CH_3SH, COS, and thiophene are the sulfur species that were tested. A surrogate ambient nonmethane hydrocarbon mixture, known as the Empirical Kinetics Model Approach (EKMA) Mix, was selected. This hydrocarbon mixture was comprised of 25 percent propene and 75 percent butane (on a carbon basis). A 5 by 5 experimental matrix was designed. In this matrix, initial EKMA Mix concentrations ranged from 0.0 to 2.0 ppmC, initial NO_x concentrations ranged from 0.0 to 0.4 ppm (20 percent NO_2), and the finite initial HC/NO_x ratios ranged from 0 to 40 ppmC/ppm. The photochemical behavior of mixtures of a selected sulfur species, the EKMA Mix, and NO_x was examined by conducting experiments at various points on the experimental matrix both with and without 1 ppm of each sulfur species.

In the absence of added sulfur species, the EKMA Mix-NO_x system produced maximum ozone concentrations that are consistent with the current understanding of ozone-precursor relationships. Both measured maximum ozone concentrations and estimated average hydroxyl radical concentrations are in good agreement with model predictions.

The presence of SO_2 exerted a small influence on ozone production by the EKMA Mix-NO_x system. The addition of 1 ppm SO_2 reduced ozone production by 18 percent at one point on the matrix.

The addition of H_2S to EKMA Mix-NO_x systems reduced the photochemical reactivity of these systems by delaying NO photooxidation and the subsequent accumulation of O_3. This inhibitory effect was more pronounced for a low reactivity system than for a high reactivity system. An upper limit for the H_2S-OH reaction rate constant was estimated to be 0.83×10^6 ppm^{-1} hr^{-1}. Sulfur dioxide rather than particulate sulfur comprised most of the accountable product sulfur. A lower limit of approximately 0.6 was established for

the SO_2 yield.* These results indicate that if sulfate is the ultimate product of H_2S oxidation in the troposphere, it is not formed directly; rather, SO_2 is formed initially, and sulfates are produced by subsequent oxidation.

The presence of CH_3SH in the CH_3SH-EKMA Mix-NO_x system dominated the photochemical behavior, except at 0.4 ppm NO_x, where the addition of hydrocarbons enhanced ozone production. Methanethiol is highly reactive, and on the average only 3.1 hours of irradiation past sunrise was required for half of the initially present species to be consumed. An upper limit for the CH_3SH-OH reaction rate constant of 11×10^6 ppm^{-1} hr^{-1} was estimated. Sulfur dioxide production was dominated by the presence of CH_3SH and was essentially constant across the matrix. An average SO_2 yield of 0.36 was observed. Particulate sulfur production was also dominated by the presence of CH_3SH but was reduced by the addition of hydrocarbons.

Carbonyl sulfide was found to be unreactive under all the test conditions employed in the current study. Its presence had no effect on ozone production. Experiments with COS produced no SO_2 and no appreciable particulate sulfur and showed the COS concentrations to be highly stable.

The addition of EKMA Mix to the thiophene-NO_x system acted to inhibit ozone production at low initial [NO_x] and acted to enhance ozone production at high initial [NO_x]. An upper limit for the thiophene-OH reaction rate constant of 1.1×10^6 ppm^{-1} hr^{-1} was estimated. Sulfur dioxide, COS, and particulate sulfur were observed as reaction products. Similar trends in the maximum concentrations of ozone and the sulfur-containing products occurred across different initial conditions.

Same-day experiments were conducted to compare the effects of adding SO_2, H_2S, thiophene, and CH_3SH to matched HC-NO_x systems. These experiments indicate that sulfur dioxide production depends on both the test compound and the conditions employed. These experiments suggest that the release of thiophene or CH_3SH into a NO_x-rich air parcel can result in appreciable ozone and particulate sulfur production, while the release of H_2S under similar conditions can reduce ozone production. In an HC-rich air parcel the introduction of H_2S, thiophene, or CH_3SH can inhibit ozone production. The results show that with

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*SO_2 yield is the ratio of the maximum SO_2 concentration to the amount of reactant sulfur species that has been lost (presumably due to reaction) at the time of the maximum SO_2 concentration.

a single exception, the addition of H_2S, thiophene, or CH_3SH to irradiated EKMA Mix-NO_x systems produces more particulate sulfur than is formed by the addition of an equivalent amount of SO_2. This finding suggests that emissions controls aimed at controlling ambient particulate sulfur concentrations should be at least as stringent for H_2S, thiophene, and CH_3SH emissions as they are for SO_2 emissions.

SECTION 3
EXPERIMENTAL

OVERVIEW

This subsection describes the experimental design and provides a general overview of the experiments that were conducted in this study. Descriptions of the smog chamber facility, reagents, measurement methods, data collection and handling, and experimental procedures are provided in subsequent subsections.

The main goal was to examine the photochemical behavior of mixtures of selected sulfur species, hydrocarbons, and nitrogen oxides. Sulfur dioxide, H_2S, CH_3SH, COS, and thiophene were selected as the sulfur species to be studied. A surrogate ambient nonmethane hydrocarbon mixture comprised of 25 percent propene (on a carbon basis) and 75 percent butane was selected. This composition was chosen to coincide with that selected by EPA to approximate multicomponent urban organic mixtures in computer modeling efforts (4, 5). In the current report this hydrocarbon mixture is referred to as the "EKMA Mix".

A 5 by 5 experimental matrix was designed and is shown in Figure 1. In this matrix, initial EKMA Mix concentrations range from 0 to 2.00 ppmC, initial NO_x concentrations range from 0 to 0.40 ppm, and the finite initial HC/NO_x ratios range from 0 to 40 ppmC/ppm. These ratios are given within each cell of the matrix in Figure 1. Initially, the complete matrix of experiments was conducted in the absence of sulfur species. Subsequently, target sulfur species concentrations of 1 ppm were employed in combination with several of the EKMA Mix and NO_x concentrations selected from the matrix. Single-day, multiple chamber experiments were conducted either with a single sulfur species at multiple points on the matrix or with multiple sulfur species at a single point on the matrix.

A total of 172 single-chamber experiments was conducted over 43 test days during 1978 and 1979. A summary of the experimental program is presented in

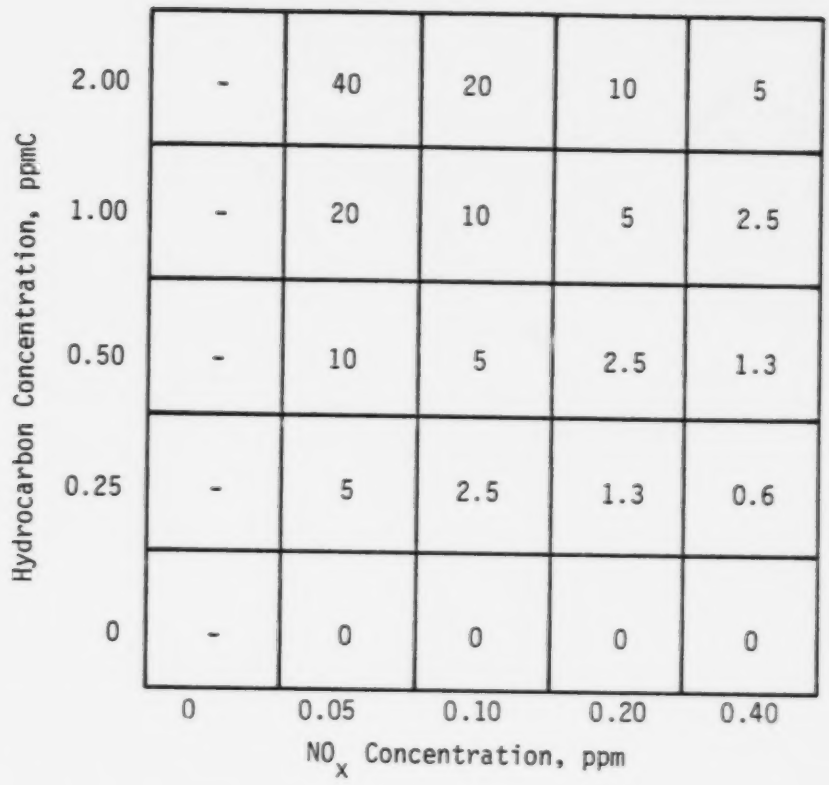


Figure 1. 5 x 5 experimental matrix with resulting HC/NO_x ratios contained within each cell.

Table 3. To provide rough indications of the environmental conditions that prevailed during each run day, temperature and solar radiation conditions are also tabulated.

One hundred forty-four of the experiments involved the irradiation of sulfur species, EKMA Mix, and/or nitrogen oxides. In addition, several chamber characterization experiments were conducted. Except for the characterization experiments, which are summarized in the text, the data collected during the experimental program are tabulated in the appendix.

RTI SMOG CHAMBER FACILITY

The Research Triangle Institute Smog Chamber Facility consists of four cylindrically-shaped smog chambers. Each chamber has a surface area of 51 m^2, a volume of 27 m^3, and a surface-to-volume ratio of 1.9 m^{-1}. The walls are fabricated from 0.13-mm (5 mil) thick fluorinated ethene propene (FEP) Type A Teflon® film and are supported by an interior aluminum framework. The chambers are located outdoors, and irradiation is provided by natural sunlight. In addition to the chambers proper, provisions exist for air purification, reactant injection, and sample collection with subsequent instrumental and manual analyses. A detailed description of this facility is reported elsewhere (3).

REAGENTS

Air used in the smog chamber experiments was supplied from the air purification systems that are located under each chamber. The other reagents used in this study are identified in Table 4. These compounds are grouped according to their use: injection (pure) gases, injection gas mixtures, calibration gas mixtures, and test compounds. Additional information including formula, molecular weight, melting point, boiling point, injection mode, supplier, and supplier's stated purity is provided.

Freon-12 was used as a tracer in several experiments to permit the determination of the chamber leakage. Matheson UHP grade methane was injected at a target concentration of 10 ppm in each chamber experiment to permit quantification of chamber leakage. The nitrogen that was used to purge the injection lines was Airco 0.5 grade. Zero (Z-2) grade oxygen was used for O_3 injections.

The EKMA Mix was injected from a Scott tank that contained a mixture of propene, butane, and air. Nitrogen oxides were introduced from separate Scott tanks that contained NO in N_2, and NO_2 in N_2.

TABLE 3. SUMMARY OF THE EXPERIMENTAL PROGRAM[a]

Run No.	Date	% SS[b]	CU-SR[c]	Ambient Tmax[d]	Chamber Tmax[e]	Run Description
54	7-20-78	97	645	27.9	-	Purified Air Irradiation[f]
56	7-25-78	62	434	26.8	-	Freon-12 Leak Test[f]
58	7-30-78	82	573	29.3	-	Freon-12 Leak Test[f]
59	8-2-78	68	-	27.2	-	SO_2 Decay[f]
60	8-23-78	97	585	27.4	-	O_3 Decay[f]
62	8-27-78	82	442	27.0	-	NO[f]
63	8-29-78	78	470	30.4	-	EKMA Mix
64	9-6-78	91	437	25.8	-	EKMA Mix/NO
65	9-7-78	96	530	28.5	-	EKMA Mix/NO_x
66	9-8-78	82	465	29.0	-	EKMA Mix/NO_x
67	9-9-78	94	494	30.4	-	EKMA Mix/NO_x
75	9-26-78	98	424	21.6	27.6	SO_2/EKMA Mix/NO_x
76	9-28-78	77	-	25.1	31.5	SO_2 Decay
77	10-2-78	97	406	21.3	27.5	SO_2/NO
78	10-3-78	49	338	21.4	27.9	SO_2/EKMA Mix/NO_x
79	10-7-78	82	364	14.8	20.8	SO_2/EKMA Mix
80	10-8-78	99	439	14.3	21.1	SO_2/EKMA Mix/NO
81	10-9-78	97	439	14.4	21.2	SO_2/EKMA Mix/NO_x
82	10-10-78	94	422	18.7	25.4	SO_2/EKMA Mix/NO_x[g]
83	10-12-78	92	328	23.2	29.4	H_2S/EKMA Mix/NO_x
84	10-13-78	39	289	23.0	29.1	H_2S/EKMA Mix/NO_x
85	10-17-78	48	293	11.3	16.3	H_2S/NO
86	10-18-78	83	393	15.3	21.6	H_2S/EKMA Mix/NO[g]
89	10-21-78	90	365	19.7	25.8	CH_3SH/EKMA Mix/NO
90	10-22-78	100	356	22.3	27.8	CH_3SH/EKMA Mix/NO_x
91	10-23-78	95	338	24.8	30.3	CH_3SH/EKMA Mix/NO_x
92	10-25-78	100	363	19.0	24.2	CH_3SH/EKMA Mix/NO_x
95	11-2-78	90	304	18.7	23.8	COS/EKMA Mix/NO_x
96	11-3-78	46	236	17.4	22.2	COS/EKMA Mix/NO_x[g]
97	11-5-78	94	306	20.7	25.2	Thiophene/NO_x
98	11-6-78	100	303	22.6	27.5	Thiophene/NO_x
106	6-12-79	96	703	26.2	32.7	Purified Air Irradiation[f]
107	6-13-79	100	684	27.6	34.6	O_3 Decay[f]
108	6-14-79	86	642	25.7	31.4	SO_2 Decay
110	6-20-79	93	707	25.8	-	Ambient Air Irradiation[f]
114	6-26-79	97	678	23.8	31.7	COS
115	6-27-79	88	644	25.2	34.1	H_2S
116	6-28-79	87	613	27.7	36.5	CH_3SH
117	6-29-79	23	520	28.4	35.0	Multi-Sulfur[h]
118	7-2-79	77	612	29.8	37.6	Multi-Sulfur[h]/EKMA Mix/NO
119	7-3-79	97	694	29.7	37.4	Multi-Sulfur[h]/EKMA Mix/NO_x
120	7-5-79	93	684	25.8	33.8	Multi-Sulfur[h]/EKMA Mix/NO_x
121	7-6-79	84	652	25.0	33.6	Multi-Sulfur[h]/EKMA Mix/NO_x

[a]Unless noted otherwise, data from these experiments are tabulated in the appendix.

[b]Duration of solar radiation reported as percent of possible minutes of direct sunshine.

[c]Cumulative daily total solar radiation expressed in Langleys.

[d]Ambient daily maximum temperature in ° C.

[e]Daily maximum temperature in ° C measured in Chamber No. 1.

[f]Chamber characterization experiment; data are summarized and discussed in text but are not tabulated in the appendix.

[g]Special experiment designed to assess impact of added sulfur species by comparing results of EKMA Mix/NO_x experiments to those of identical experiments with added sulfur species.

[h]Multi-Sulfur experiments had 1 ppm CH_3SH in Chamber No. 1, 1 ppm SO_2 in Chamber No. 2, 1 ppm H_2S in Chamber No. 3, and 1 ppm thiophene in Chamber No. 4.

TABLE 4. REAGENTS

Reagent	Formula	Molecular Weight	MP, °C[a]	BP, °C[b]	Injection Mode[c]	Supplier	Supplier's Stated Purity, %
Injection (Pure) Gases							
Difluorodichloromethane (Freon-12)	Cl_2CF_2	121	-155	-29	G	Virginia Chemical	Not specified
Methane (UHP)	CH_4	17	-184	-162	G	Matheson	99.97
Nitrogen (0.5)	N_2	28	-210	-196	IS	Airco	99.995
Oxygen (Z-2)	O_2	32	-218	-183	IS	Scientific Gas Products	99.95
Injection Gas Mixtures							
EKMA Mix	C_3H_6/C_4H_{10}	-	-	-	IS	Scott	73.5 ppm C_3H_6 and 169 ppm C_4H_{10} in air
Nitric Oxide	NO	30	-164	-152	IS	Scott	1170 ppm in N_2
Nitrogen Dioxide	NO_2	46	-11	21	IS	Scott	209 ppm in N_2
Calibration Gas Mixtures							
EKMA Mix	C_3H_6/C_4H_{10}	-	-	-	CAL	Scott	1.96 ppm C_3H_6 and 2.97 ppm C_4H_{10} in air
Methane	CH_4	17	-184	-162	CAL	Airco	9.6 ppm in air
Nitric Oxide	NO	30	-164	-152	CAL	Scott	52.2 ppm in N_2
Test Compounds							
Carbonyl Sulfide	COS	60	-138	-50	G	Matheson	97.5
Hydrogen Sulfide	H_2S	34	-86	-61	G	Matheson	99.5
Methanethiol	CH_3SH	48	-123	6	G	Matheson	99.5
Sulfur Dioxide	SO_2	64	-73	-10	G	Matheson	99.98
Thiophene	C_4H_4S	84	-38	84	V	Aldrich	99+

[a]Melting point.

[b]Boiling point.

[c]Injection modes: G--direct injection of gas via N_2-purged line into chamber;
IS--injection of gas via smog chamber injection system;
CAL--calibration gas;
V--volatilization of liquid via heated injection manifold.

Cylinders containing certified concentrations of various gases were used to calibrate selected instruments. Cylinders containing propene and butane in air, and methane in air were used to calibrate the Bendix 8201 hydrocarbon analyzer. A cylinder containing NO in N_2 was used to calibrate the TECO-14B/E nitrogen oxides analyzer.

Single component gas and liquid reagents employed in this study were acquired from commercial suppliers with stated purities generally better than 95 percent. These single-component reagents were used as received from the suppliers without further purification.

MEASUREMENT METHODS

Overview

The measurement methods that were employed in the present study are summarized in Table 5. Both automated and manual analytical techniques were employed: ozone, nitrogen oxides, peroxyacetyl nitrate (PAN), methane, propene, butane, SO_2, H_2S, COS, total sulfur, water vapor concentration, and chamber air temperature were recorded hourly for each chamber during the appropriate portion of the sampling cycle. Manual operations were performed at various times during each experiment for subsequent determination of sulfur species, total particulate sulfur (TPS), and condensation nuclei. Solar radiation (total and UV) and ambient air temperature were collected by EPA at one-minute intervals and were converted to hourly averages as reported in the appendix. In addition, percent sunshine data collected at RDU Airport were retrieved from the National Weather Service (6).

With the exception of sulfur species, detailed descriptions of the measurement methods employed in the current study have been reported elsewhere (3). Thus, only the measurement method for the sulfur species is described in this portion of the report.

Sulfur Species

Grab samples were collected periodically in FEP Teflon bags for the subsequent determination of sulfur species (SO_2, COS, H_2S, CH_3SH, and thiopene). Analysis was performed by gas chromatography with flame photometric detection.

During one experiment, samples were collected for GC/MS analysis of reactants and products. The methods employed are described elsewhere (7, 8).

TABLE 5. MEASUREMENT METHODS

Measured Quantity	Method	Manufacturer	Range	MDC
O_3	Chemiluminescent	Bendix Model 8002	0-1 ppm	0.001 ppm
NO, NO_2, NO_x	Chemiluminescent	Thermo-Electron Model 14B	0-1 ppm	0.002 ppm[a]
Peroxyacetyl Nitrate (PAN)	Gas Chromatography/ Electron Capture	Varian Model 1440	>1 ppb	1 ppb
Methane, Propene, and Butane,	Gas Chromatography/ Flame Ionization	Modified Bendix Model 8201	0-10 ppm (v/v)	0.005 ppm (v/v)
SO_2, H_2S, COS, and Total Sulfur	Gas Chromatography/ Flame Photometry	Tracor Model 270HA	0-1.5 ppm	0.03 ppm
Sulfur Species	Gas Chromatography/ Flame Photometry	Tracor Model 560	0-2.0 ppm	0.005 ppm
Total Particulate Sulfur (TPS)	Filter Collection/ X-ray Fluorescence	---	0-4000 $\mu g/m^3$[b]	5 $\mu g/m^3$[b]
Condensation Nuclei (CN)	Photoelectric	Gardner Associates, Type CN	0-10^7 CN/cm^3	100 CN/cm^3
Freon-12	Long Path Infrared Spectroscopy (LPIR)	Wilks Scientific, Miran I	0-700 ppm	0.08 ppm
Water Vapor Concentration	Dew Point Condensation	EG & G Model 880	-40 - +50°C	(±0.5°C)[c]
Air Temperature, Chamber	Thermistor	Yellow Springs Model 91	-34 - +42°C	(±0.9°C)[c]
Ambient[d]	Thermistor	Yellow Springs Model 15122	--	(±0.05°C)[c]
Solar Radiation, Total[d]	Thermopile	Eppley Model PSP	0-4 Langleys[e]	--
Ultraviolet[d]	Photoelectric Cell	Eppley Model TUVR	0-0.1 Langleys[e]	--
% Possible Minutes Sunshine[f]	Photoelectric Cells	Foster Sunshine Switch	--	--

[a]Minimum detectable concentration as reported by the manufacturer.

[b]Depends on sampling rate and duration.

[c]Accuracy is listed in parentheses.

[d]Data collected by the U.S. EPA, Division of Meteorology, Research Triangle Park, North Carolina

[e]Langley = 1 cal $cm^{-2} \cong 700$ W m^{-2}.

[f]Data Collected by NWS Forecast Office at RDU (6).

Teflon sample bags were flushed with zero air and evacuated prior to use. Sampling involved connecting a bag to the sampling manifold in the Smog Chamber Instrumentation Laboratory and filling to a volume of approximately 6 liters. The bag was stored in the dark, usually for no more than 15 minutes prior to analysis. Samples were normally collected at two-hour intervals. Thus, approximately four samples were collected from a chamber during an experiment.

A Tracor Model 560 gas chromatograph equipped with an FPD was used to determine the sulfur species investigated in the current study. The instrument was modified for trace sulfur work: all tubing interconnecting the valves was made of Teflon; a 5-mL Teflon sample loop was used; the valve body was constructed of Carpenter 20 nickel alloy; and the line connecting the valve and the FPD jet was glass-lined stainless steel.

Two columns obtained from Supelco, Inc., were employed for separation of the sulfur species: 183 cm × 3.2 mm Teflon (FEP) packed with Chromosil 330; and 183 cm × 3.2 mm Teflon (FEP) packed with 1.5% XE-60/1% H_3PO_4 on Carbopack B. Column temperature was 60° C, and helium was used as the carrier. Gas flow rates were selected for each test compound to maximize sensitivity.

A Hewlett-Packard Model HP-3352 Laboratory Data System or a Spectra-Physics Model 23000-011 Minigrator was used for peak detection and integration. Strip chart records of output signals were maintained to supplement data system records.

Calibration gas mixtures were prepared in air from a permeation tube calibration system. Permeation tubes were obtained from Metronics, Inc. Generally, two or three calibration bags were analyzed daily for each compound under study on that day.

The minimum detectable concentrations varied depending on the compound but was approximately 0.01 ppm. Duplicate injections were made for each analysis, and the precision was generally better than 10 percent.

DATA COLLECTION AND HANDLING

The data handling system employed for the outdoor smog chamber data collected in the present study is composed of a sequence of manual and machine processing steps that is depicted in Figure 2. As a result of the number of parameters (e.g., O_3, NO, NO_2, etc.) being measured, their temporal density, and the diversity of their output formats, the data were introduced into the

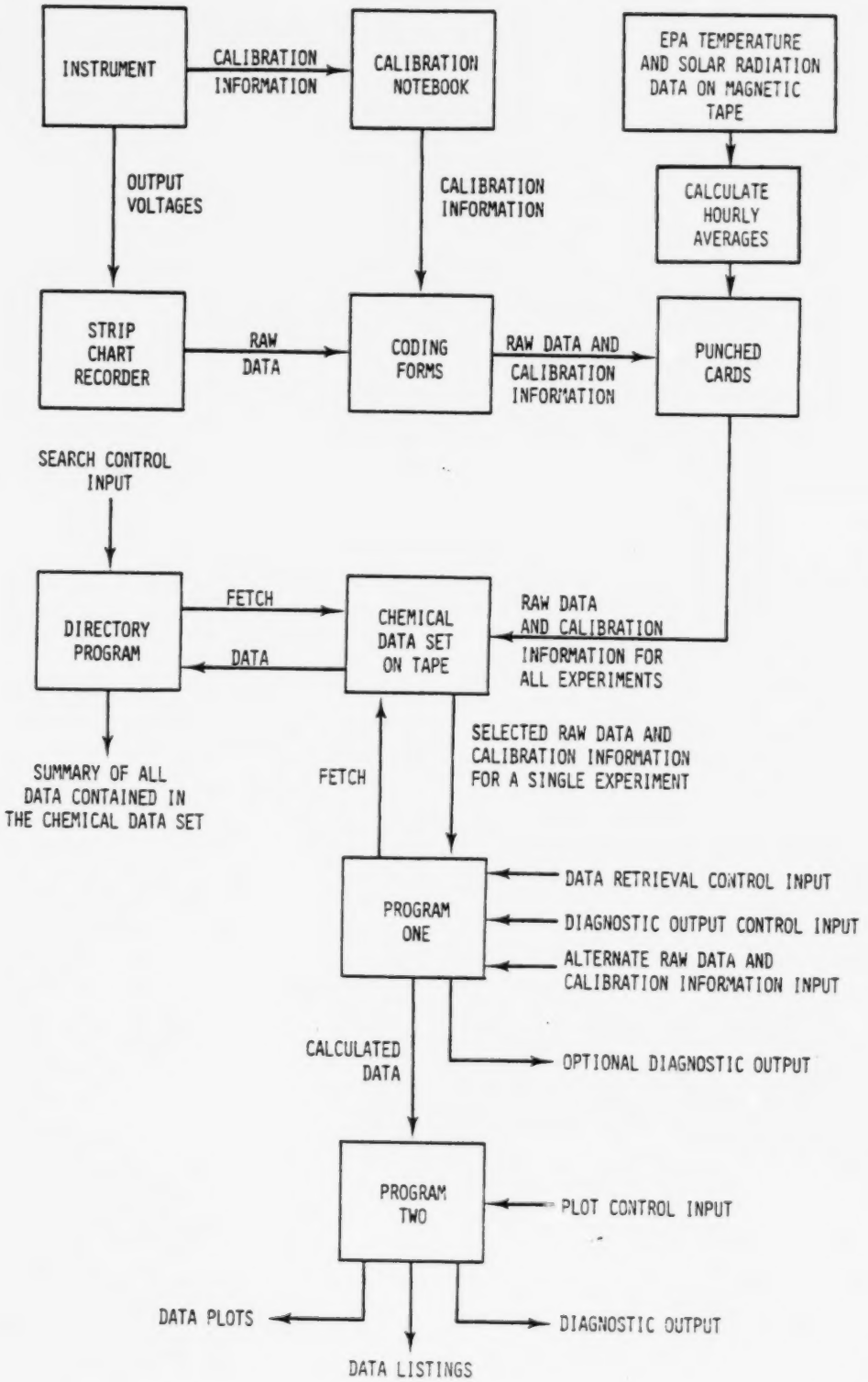


Figure 2. Flowchart of overall data handling system.

system at a time following the experiments rather than on a real-time basis. Raw data were manually transferred from some form of hard copy output onto computer cards. Calibration information was also handled in this manner. Both are retained in the permanent records of the project.

The format in which the data were originally collected was dependent on the measurement method. The output of the ozone, nitrogen oxides, automatic sulfur gas chromatograph, LPIR, dew point, and chamber air temperature monitors was recorded on strip chart recorders. A Hewlett-Packard Model 3352 Laboratory Data System with teletype output was used to collect data from the gas chromatographs that monitored PAN and methane, propene, and butane. The results of analyses of grab samples for sulfur species were recorded by the HP-3352 or Spectra-Physics minigrators prior to manual reduction. The results of EPA's analyses of filter samples were reported on computer printout. Condensation nuclei measurements were recorded in notebooks from instrument meter deflections. Ambient air temperature, as well as total and ultraviolet solar radiation data were obtained from EPA on magnetic tape.

In addition to variations in their physical form, the raw data were also varied in their temporal structure. The automatic stepping of the sampling system from one chamber to the next resulted in the multiplexing of the measurements from the O_3, NO_x, temperature, and dew point instruments, and the automatic gas chromatographs. Ozone, nitrogen oxides, temperature, and dew point raw data were taken from the eighth minute of each 10-minute sampling period. One measurement per sampling period was made by the automatic gas chromatographs. Samples were collected at irregular intervals with the TPS filter sampler, the CN counter, and Teflon bags (for manual analysis of the sulfur species). Solar radiation and temperature measurements were recorded on tape by EPA at one-minute intervals. These data were read, converted to hourly averages, and punched onto cards.

At the end of an experiment, all RTI data pertaining to that experiment were organized and stored in a folder. Subsequently, the raw data were transferred to computer coding forms along with identifying information, such as the time and chamber number, which is associated with each measurement. The raw data were recorded in the units in which they were originally outputted (e.g., percent of recorder full scale). They remained in the multiplexed format in which they were originally measured. Calibration information which

was used to convert the data from raw data units to concentration units was also entered on the coding forms. In general, several sets of coding forms were needed to record all the parameters which were measured in an experiment. This meant that parameters were handled by the computer as groups of parameters rather than as individual parameters or as an entire ensemble of measurements. During processing, each parameter within a group was identified by its SAROAD number (e.g., ozone = 44201). The information contained on the coding form was then keypunched onto cards. Either the cards or a magnetic tape, which was created from the cards, could be used as input for the data handling programs.

As is indicated in Figure 3, the raw data are converted into calculated data in concentration units by Program One. The first step in this process is the calculation of calibration values for each measurement. Since several parameters can experience calibration shifts over the course of a single experiment, error would result if a fixed calibration value were used. This problem is avoided by the calculation of linearly interpolated calibration values between measured calibration points. These interpolated calibration values are then used to convert the measurements to concentration units. In addition to employing routine zero-and-span type calibrations, Program One has the capability of handling more complex nonlinear calibration calculations and data validity assessments via special algorithms, which are tailored to individual parameters.

At this stage, the data are still multiplexed and are still separated into parameter groups. The final step of Program One is to de-multiplex the data within each parameter group. The data are separated by chamber number and are put into chronological order. The data are then passed to Program Two and may also be placed in a data set for output by a digital plotter.

The purpose of Program Two is to reorganize further the data such that all the measurements for a particular chamber and time are merged into a single ensemble and then to output this reorganized data. This process is illustrated in Figure 4. Since different groups of measurements were made at different times, a common time base for all the parameter groups must be established. This is the first step in Program Two.

In general, the listed measurement times for a chamber correspond to the eighth minute of the 10-minute sampling period for that chamber. Other measure-

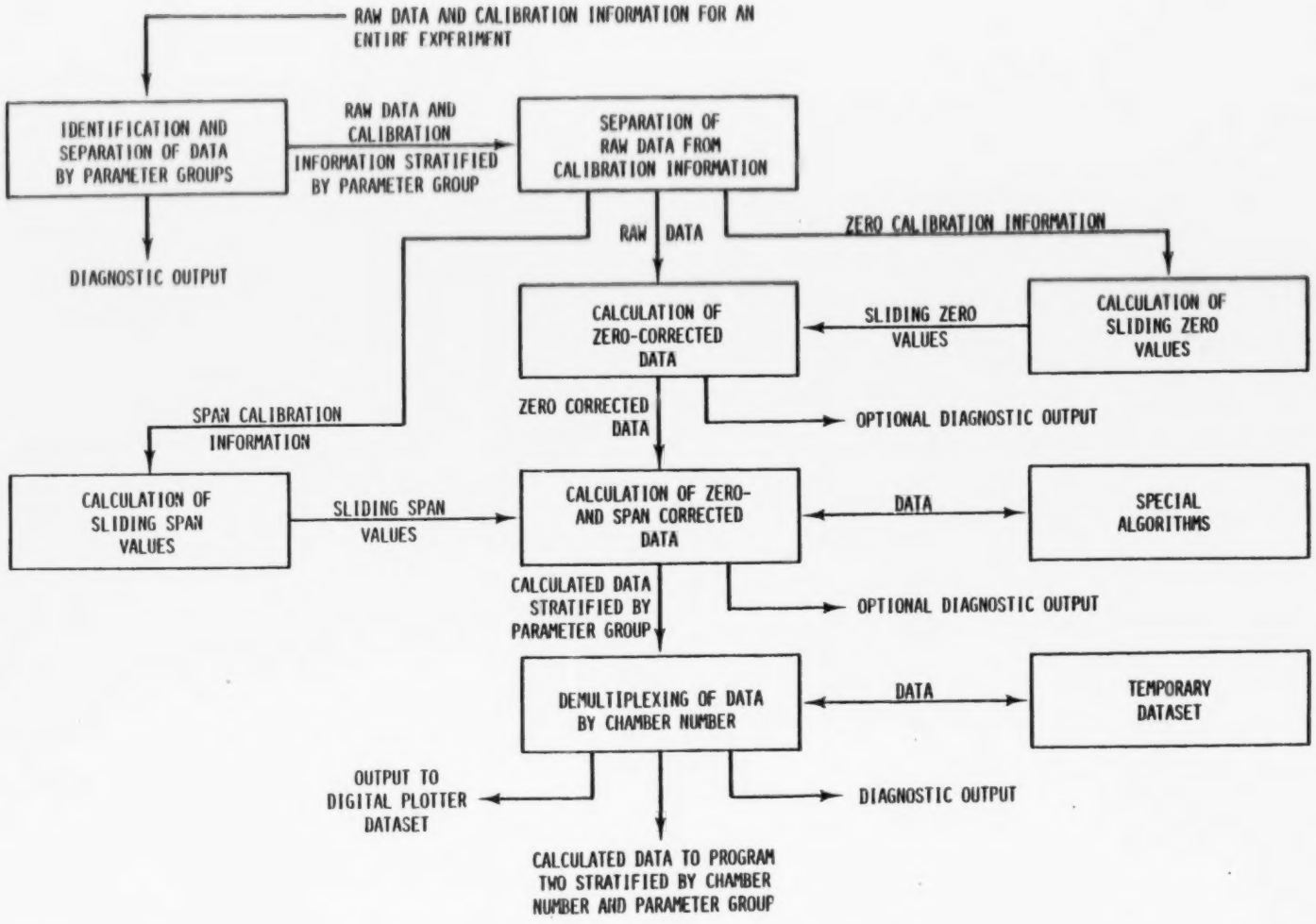


Figure 3. Flowchart of program one.

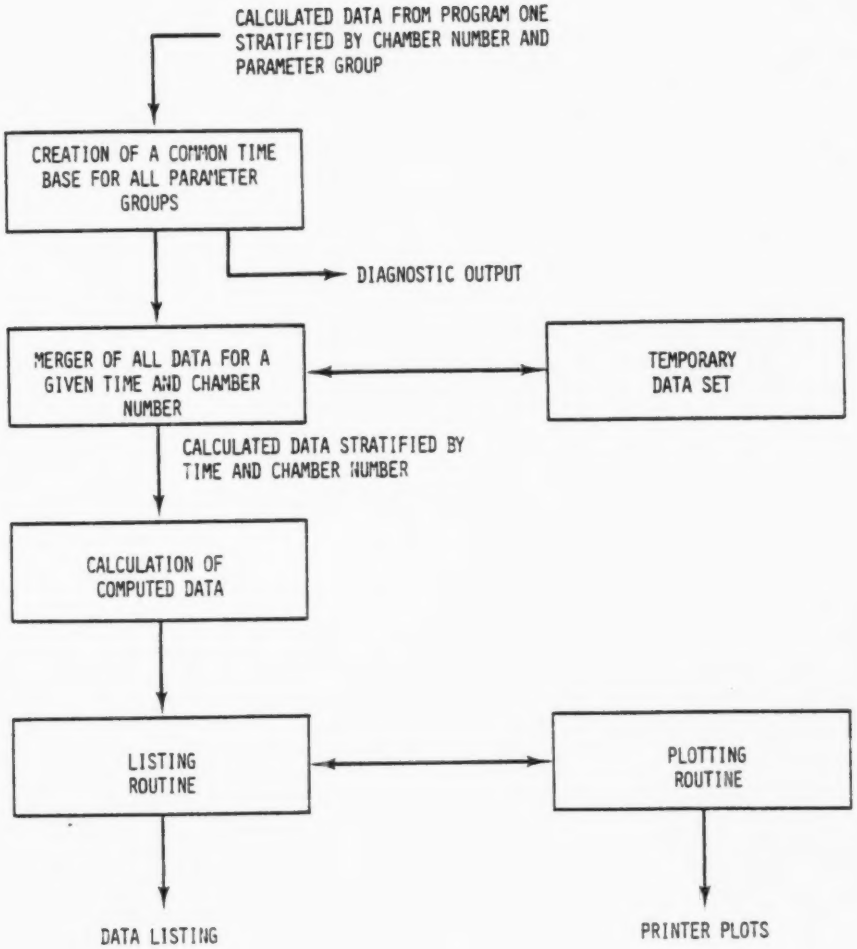


Figure 4. Flowchart of program two.

ments for that chamber (e.g., grab samples) made within ±20 minutes of the time designated for automated measurements are assigned to that time slot. If a measurement falls outside this 40-minute window, it is assigned to a new time slot. It should be noted that these data were converted by Program One to fractional hours (EST).

The next step taken in Program Two is to merge all the data associated with a given time and chamber from the various parameter groups into a single ensemble of data. At this stage, the data are used to calculate derived parameter concentrations from the measured data. Examples of this feature are the calculation of NO_x concentrations from NO and NO_2 measurements and of integrated light intensities (CU-SR) from hourly average solar radiation measurements. The following formulae were used in these computations:

$$NO_x = NO + NO_2$$

$$CU\text{-}SR = \sum_{i=0}^{h-1} SR(i) + (m/60)\, SR(h)$$

where

SR(i) is the average total solar radiation for the ith complete hour;

h is the number of the indicated hour; and

m is the number of minutes from the top of the indicated hour until the indicated time.

It should be noted that the solar radiation data (both total and ultraviolet) are listed in the appendix as hourly averages in units of Langleys per minute (cal cm^{-2} min^{-1}). The CU-SR is a measure of the cumulative solar radiation that had occurred up to the indicated time and is expressed in Langleys (cal cm^{-2}).

The final step in Program Two is the listing and plotting of the data on a line printer. In addition to listing the data in their final form, the two programs output various diagnostic data listings to facilitate verification and correction of the data. In the present study, the data handling programs were normally used at least twice. Initially, listings and plots were generated to facilitate verification and correction of the data. Next, the final listings of the verified data were produced and are displayed in the appendix.

The data tabulated in the appendix contain default entries that require identification. Blank spaces indicate that data are not available. Measured zero values and negative outputs resulting from instrumental zero drift are designated as 0.0. Values measured to be greater than zero but less than 0.001 measurement units (usually ppm) are indicated by 0.000.

PROCEDURE

The experiments conducted in the present study involved the irradiation of each of several sulfur species in the presence of a hydrocarbon mixture and nitrogen oxides. The research plan was designed to investigate selected aspects of the photochemical behavior of mixtures of sulfur species, hydrocarbons, and nitrogen oxides under simulated atmospheric conditions. One-day experiments were performed in the outdoor RTI Smog Chamber Facility. The chambers were operated in the static mode (no dilution) to simulate stagnation conditions. The procedure employed in these experiments is described in this subsection.

A normal one-day run involved 12-18 hours of data collection. Instrument calibration, chamber preparation, and air purification operations consumed the remaining time. A run was normally begun at 1700 EST when the previous run was terminated. The chambers were then purged at a flow rate of up to 2.3 m^3 min^{-1} for 1 to 2 hours. During this period the air purification unit was activated and achieved its normal operating temperatures and flow rates.

At approximately 1900 EST the purging operation was terminated, each chamber was sealed, and the cleanup operation was begun. Contaminants in the chamber air were removed by recirculation of the chamber contents through the air purification unit for approximately 8 hours at a flow rate of 0.28 m^3 min^{-1}. In the present study the humidity of the chamber contents was not altered during cleanup operations.

At approximately 0300 EST, 2 to 3 hours before sunrise, the cleanup was terminated, and reactants were injected. Methane was introduced into each chamber to a target of 10 ppm by syringe injection of pure methane. Appropriate amounts of NO and NO_2 were introduced sequentially into each chamber from separate gas cylinders using the reactant injection system. EKMA Mix was injected simultaneously with the NO_x injection from a gas cylinder using the reactant injection system. Finally, the test species was introduced into each

chamber by syringe injection of the pure compound. Injection operations were completed by approximately 1 hour before sunrise. This permitted time for mixing and initial sampling prior to sunrise.

Normally, the contents of each chamber were sampled and monitored from 0000 to 1700 EST. Ozone, NO, NO_2, PAN, methane, propene and butane, SO_2, COS, H_2S, total sulfur, dew point, and chamber air temperature were monitored once per hour for each chamber. Manual operations for sulfur species, TPS, and CN determinations were performed periodically. Generally, each run was terminated at 1700 EST.

SECTION 4
RESULTS AND DISCUSSION

OVERVIEW

The objective of the present investigation was to conduct smog chamber studies of the atmospheric chemistry of selected sulfur-containing species in the presence of hydrocarbons, nitrogen oxides, and sunlight. A major goal was to investigate ozone formation, and, where appropriate, SO_2 and sulfate production. Sulfur dioxide, H_2S, COS, CH_3SH, and thiophene were the sulfur species chosen for study. A mixture of 25 percent propene and 75 percent butane, known as the EKMA Mix, was selected as the hydrocarbon mix for the study. A 5 × 5 experimental matrix was chosen to encompass initial EKMA Mix concentrations of 0 to 2.00 ppmC, initial NO_x concentrations of 0 to 0.40 ppm, and finite initial HC/NO_x ratios of 0 to 40 ppmC/ppm. Initially, the complete experimental matrix was conducted in the absence of sulfur species. Subsequently, target sulfur species concentrations of 1 ppm were employed at various points on the experimental matrix.

The current study is comprised of several types of investigations: chamber characterization experiments; EKMA Mix-NO_x experiments; SO_2-EKMA Mix-NO_x experiments; H_2S-EKMA Mix-NO_x experiments; CH_3SH-EKMA Mix-NO_x experiments; COS-EKMA Mix-NO_x experiments; thiophene-EKMA Mix-NO_x experiments; and same-day experiments with SO_2, H_2S, thiophene, and CH_3SH. The experimental program is summarized in Table 3, along with indicators of the environmental conditions that prevailed on each run day. Except for the characterization experiments which are summarized in the text, the data collected during the experimental program are tabulated in the appendix.

CHARACTERIZATION EXPERIMENTS

Chamber characterization experiments were conducted to document the behavior of the RTI smog chambers under selected conditions. These experiments include ozone decay experiments, purified air irradiations, ambient air irradiations, SO_2 decay experiments, and leak tests using Freon-12 and methane as tracers.

Ozone Decay

Ozone decay rates reported as half-lives under both dark conditions and irradiation have been used as measures of smog chamber reactivity (9). These experiments permit comparison with the performance of other smog chambers and also serve to document differences in chamber behavior over time.

The ozone half-lives listed in Table 6 reflect consistent behavior from chamber to chamber. Dark-phase half-lives range from 36 to 56 hours with an overall mean of 45 hours. Ozone half-lives under exposure to natural irradiation range from 8 to 17 hours with an overall mean of 13 hours. The faster decay of ozone under irradiation is due to ozone photolysis and the associated secondary reactions. Both dark and light-phase half-lives are consistent with those measured previously in the RTI chambers (2, 3). These findings suggest that the chambers were relatively inert with respect to ozone behavior.

Purified Air Irradiations

The purpose of purified air irradiations is to document the concentration of ozone that accumulates in each of the chambers when purified air is irradiated. Maximum O_3 concentrations produced in experiments conducted on July 20, 1978 and June 12, 1979 are shown in Table 6. Both days were sunny and warm. The mean maximum O_3 concentrations for these two days were 0.074 and 0.086 ppm. The across-chamber comparison showed acceptable precision with percent standard deviations of approximately 25 percent. Results from these purified air irradiations may be compared with results from the June 20, 1979 ambient air irradiation, where the mean maximum O_3 concentration was 0.165 ppm. This comparison suggests that the presence of O_3 precursors in ambient air was sufficient to enhance the O_3 production by a factor of 2 over that for purified air. Results from both the purified air and the ambient air irradiations are consistent with previous results in the RTI chambers.

SO_2 Decay

The behavior of SO_2 was investigated in the absence of other added reactive species. As indicated in Table 6, the daytime SO_2 half-lives ranged from 4.5 to 15.3 hours with an overall mean of 9.2 hours. These half-lives are consistent with those measured previously in the RTI chambers (3). Additional studies at RTI have suggested that the SO_2 is lost primarily through deposition on the chamber walls. This deposition appears to depend to a large

TABLE 6. SUMMARY OF CHARACTERIZATION EXPERIMENTS

Experiment	Chamber 1	Chamber 2	Chamber 3	Chamber 4	Mean ± SD
Ozone Decay		O_3 Halflives, hr			
8-24-78[a]	44.5	47.2	52.8	56.4	50.2 ± 5.4
6-13-79[a]	36.2	37.5	43.2	40.1	39.3 ± 3.1
8-24-78[b]	14.5	15.2	15.8	17.0	15.6 ± 1.1
6-13-79[b]	11.0	10.3	13.1	7.9	10.6 ± 2.1
Purified Air Irradiation		$[O_3]_{max}$, ppm			
7-20-78	0.057	0.061	0.085	0.092	0.074 ± 0.017
6-12-79	0.072	0.061	0.097	0.115	0.086 ± 0.024
Ambient Air Irradiation		$O_{3_{max}}$, ppm			
6-20-79	0.143	0.164	0.169	0.182	0.165 ± 0.016
SO_2 Decay		SO_2 Halflives[b], hr			
8-2-78	4.5	8.9	6.9	5.7	6.5 ± 1.9
9-28-78	10.9	8.6	15.3	12.3	11.8 ± 2.8
6-14-79	-	-	-	-	-
		$[TPS]_{max}$, $\mu g/m^3$			
8-2-78	50.2	29.4	51.0	41.8	43.1 ± 10.0
9-28-78	36.3	28.0	54.3	48.3	41.7 ± 11.8
6-14-79	48.0	39.8	46.6	59.5	48.5 ± 8.2
Leak Tests		Leak Coefficient, hr^{-1}			
Freon-12[f]	0.0188	0.0135	0.0139	0.0179	0.0160 ± 0.0027
Methane[g]	0.0139	0.0102	0.0090	0.0097	0.0107 ± 0.0022
(SD)	(0.0062)	(0.0062)	(0.0071)	(0.0053)	(0.0062)

[a]Dark (0000-0600 EST) O_3 halflives expressed in hours.

[b]Halflives under irradiation (0900-1600 EST) expressed in hours.

[c]Experiment conducted in purified air.

[d]Experiment conducted in ambient air.

[e]Instrument malfunction prevented collection of $[SO_2]$ data after 1100 EST.

[f]Each entry represents an average results of 3 experiments.

[g]Each entry represents an average results of 26 experiments conducted in 1978 and 1979; the corresponding standard deviations (SD) are enclosed in parentheses.

extent on residual water that has accumulated on the surface of the Teflon film from condensation caused by diurnal temperature variation.

Appreciable amounts of particulate sulfur were formed during the SO_2 decay experiments. The average $[TPS]_{max}$ observed for 12 experiments conducted in 1978 and 1979 was 44.4 $\mu g/m^3$. This was the largest $[TPS]_{max}$ observed in the SO_2-EKMA Mix-NO_x experiments (See Figure 8). The apparent consistency across 4 chambers on 3 different days (% SD = 23) increases confidence in the reliability of the data. The absolute concentration of 44.4 $\mu g/m^3$ corresponds to the conversion 0.034 ppm of SO_2 to particulate sulfur (or approximately 3.4 percent of the 1 ppm target initial SO_2 concentration). If the reaction of SO_2 and OH is solely responsible for conversion of SO_2 to particulate sulfur, then an average [OH] can be estimated from the observed $[TPS]_{max}$ data, the time required to achieve $[TPS]_{max}$, the average $[SO_2]$, and the published rate constant (10). This estimated value, 0.07 ppt, is consistent with subsequent estimates for EKMA-NO_x experiments with and without added SO_2. Since particulate sulfur is depleted within the chambers by deposition on the walls, the estimated average [OH] represents a lower limit of the background [OH] contributed by the chambers themselves, and the true background [OH] may significantly exceed 0.07 ppt.

Leak Tests

Exchange of chamber contents with the atmosphere is expected. Chamber leakage may be attributed to replacement of the volume required by sampling and to chamber breathing caused by diurnal temperature variations and buffeting by winds. Chamber leakage results in dilution of chamber contents and this dilution may influence chemical behavior. Estimates of leak rates were made using two different tracers, Freon-12 and methane.

During most of the experiments performed in the current program, methane was injected into each chamber at a target of 10 ppm, and its concentration was followed to estimate leakage. Average loss coefficients based on methane depletion (corrected for the methane concentration in ambient air) are 0.0139, 0.0102, 0.0090, and 0.0097 hr^{-1} with an across-chamber mean of 0.0107 hr^{-1}. As indicated by the standard deviations tabulated in Table 6, the day-to-day variation in leakage (presumably due to environmental differences) is approximately 60 percent. Only three days of Freon-12 experiments were performed to

quantify chamber leakage. In view of the expected variability, the results of the Freon and methane leak tests are in good agreement and indicate that the leak rate in the RTI chambers is 1.0 to 1.5 percent per hour. It should be noted that the data reported in the appendix have not been corrected for leakage.

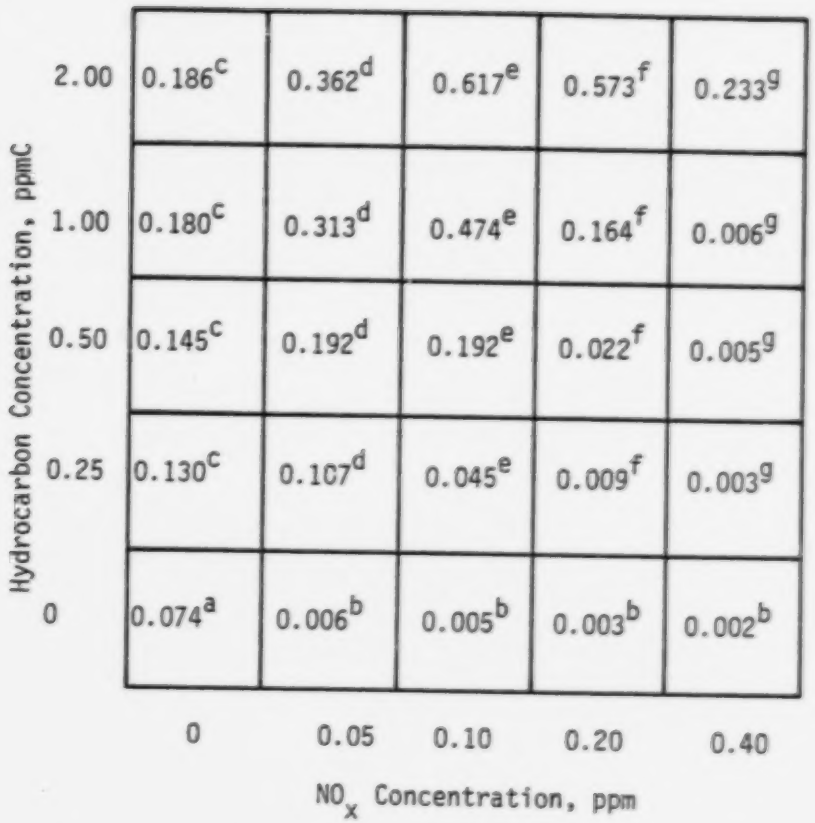
EXPERIMENTS WITH EKMA MIX AND NO_x

Twenty five experiments were conducted where purified air, EKMA Mix, NO_x, or EKMA Mix and NO_x were irradiated. The target initial conditions for these experiments can be identified on the experimental matrix shown in Figure 1. For the EKMA Mix and NO_x experiments, four experiments were conducted on a given day at four different target hydrocarbon concentrations, but at the same target NO_x concentrations. This approach permits examination of ozone production from a given day's experiments at decreasing [HC], fixed [NO_x], and identical environmental conditions.

Maximum ozone concentrations observed in the experiments conducted with purified air, with NO_x, with EKMA Mix, and with EKMA Mix and NO_x as well as the dates when they were performed, are identified in Figure 5. Although environmental conditions were different for many of these experiments, the results are consistent with the current understanding of the ozone, ozone-precursor relationship. At fixed initial NO_x concentrations, maximum ozone concentrations decreased with decreasing initial hydrocarbon (EKMA Mix) concentrations. At fixed initial hydrocarbon concentrations above 0.25 ppmC, maximum ozone concentrations progressed through maxima and subsequently decreased with increasing initial NO_x concentrations. Although the day-to-day differences in environmental conditions do not permit clear definition of the optimum HC/NO_x ratio for ozone production, the data suggest that the optimum ratio occurs at approximately 10 to 1.

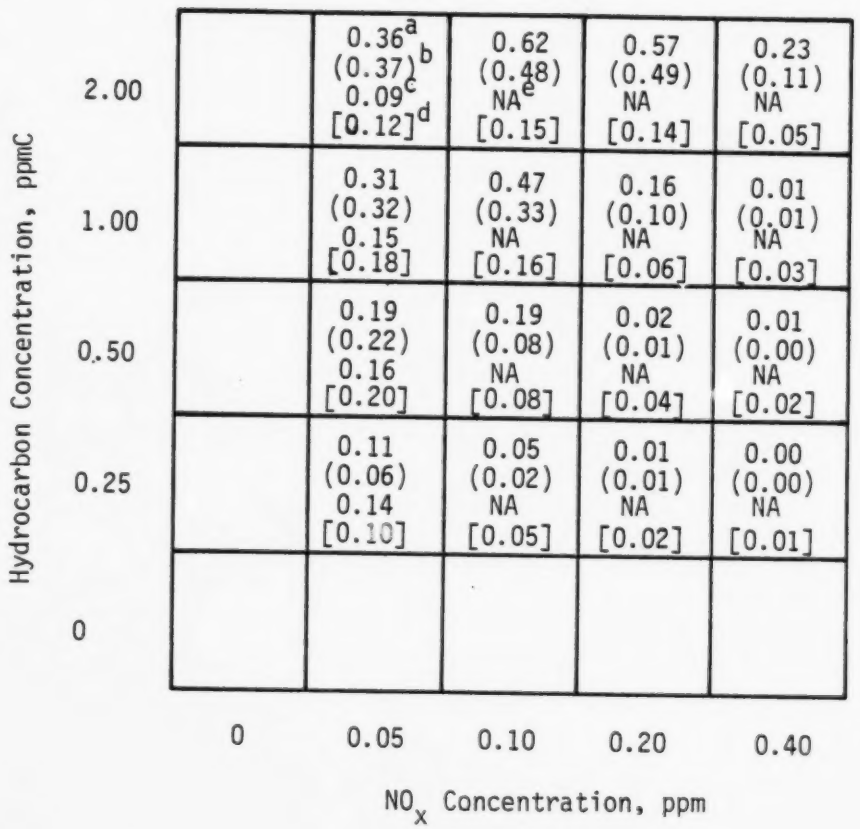
Mean OH concentrations were estimated for the experiments conducted on 6 September by following the butane concentration over the time period 0900 to 1600 EST. These $[\overline{OH}]_{9\text{-}16}$ data ranged from 0.09 to 0.16 ppt and appear to decrease with increasing HC concentration above 0.25 ppmC.

A photochemical mechanism for the EKMA Mix was written, and the EKMA Mix-NO_x experiments were modeled by computer simulation using the light intensity and temperature profiles of 9-6-78. Predicted maximum ozone concentra-



[a]Run 54, 7-20-78, entry represents a four-chamber mean.
[b]Run 62, 8-27-78.
[c]Run 63, 8-29-78.
[d]Run 64, 9-6-78.
[e]Run 65, 9-7-78.
[f]Run 66, 9-8-78.
[g]Run 67, 9-9-78.

Figure 5. Experimental matrix conducted with EKMA Mix and NO_x. Maximum ozone concentrations in ppm are identified for each experiment.



[a]Measured $[O_3]_{max}$ in ppm.

[b]Predicted $[O_3]_{max}$ in ppm.

[c]$\overline{[OH]}_{9\text{-}16}$ in ppt estimated from measured $[C_4H_{10}]$ data.

[d]Predicted $\overline{[OH]}_{9\text{-}16}$ in ppt.

[e]NA = Not Available.

Figure 6. Comparison of measured ozone maxima in ppm with $[O_3]_{max}$ and $\overline{[OH]}_{9\text{-}16}$ values predicted by computer simulation. Predicted values $[O_3]_{max}$ are enclosed in parentheses, and predicted $\overline{[OH]}_{9\text{-}16}$ in ppt are enclosed in brackets.

tions are identified in parentheses in Figure 6. In general, the agreement between observed and predicted results is good. In addition, the predicted $[\overline{OH}]_{9\text{-}16}$ are identified in brackets in Figure 6. At initial $[NO_x]$ of 0.05 ppm the observed and predicted $[\overline{OH}]_{9\text{-}16}$ also agree well.

EXPERIMENTS WITH SO_2, EKMA MIX, AND NO_x

The twenty-five experiments identified in the experimental matrix shown in Figure 1 were conducted with 1 ppm SO_2 added in each case. For the SO_2, EKMA Mix, and NO_x experiments, four experiments were conducted on a given day--at four different target hydrocarbon concentrations, at the same target NO_x concentration, and at 1 ppm SO_2. This approach permits examination of ozone production and sulfate production from a given day's experiments at decreasing [HC], fixed $[NO_x]$, and identical environmental conditions.

Maximum ozone concentrations observed in these experiments conducted with 1 ppm SO_2 as well as the dates when they were performed are identified in Figure 7. The corresponding maximum particulate sulfur concentrations and $[\overline{OH}]_{9\text{-}16}$ are identified in Figure 8.

The ozone maxima are consistent with the current understanding of the ozone, ozone-precursor relationship. At fixed initial NO_x concentrations, maximum ozone concentrations decreased with decreasing initial hydrocarbon (EKMA Mix) concentrations. At fixed initial hydrocarbon concentrations, maximum ozone concentrations progressed through maxima and subsequently decreased with increasing initial NO_x concentrations. At initial hydrocarbon concentrations of both 1.00 and 2.00 ppmC the HC/NO_x ratio of 20 to 1 yielded the largest maximum ozone concentrations.

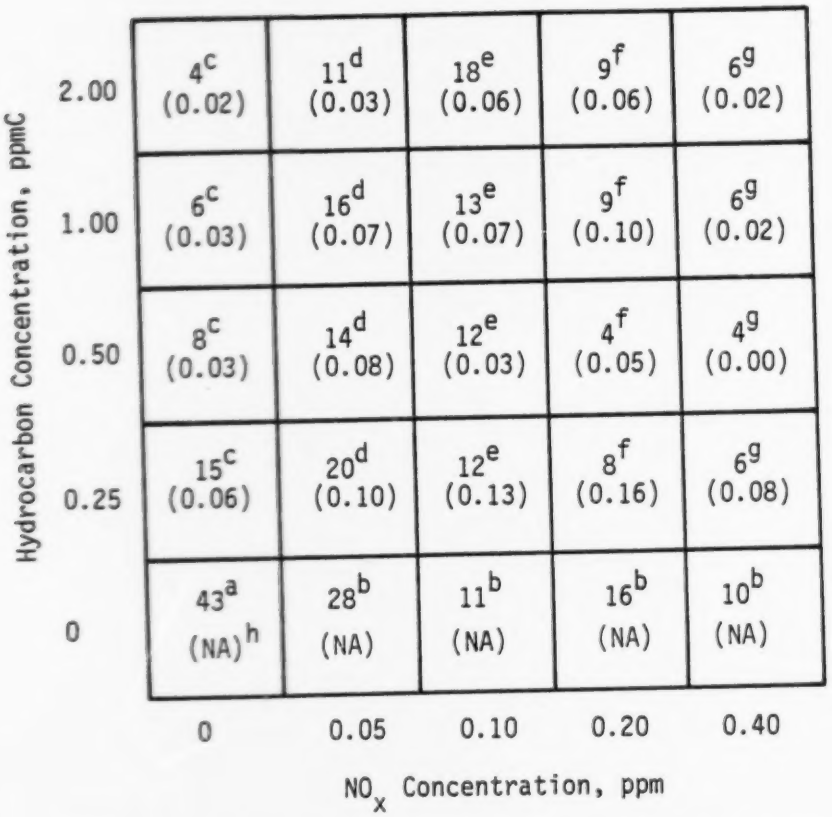
Maximum particulate sulfur concentrations displayed in Figure 8 in general were very low. The maximum particulate sulfur concentration (43 $\mu g/m^3$) was observed in SO_2 decay experiments without added HC and NO_x. The maximum particulate sulfur observed with EKMA Mix (and no NO_x) was 15 $\mu g/m^3$, with NO_x (and no EKMA Mix) was 28 $\mu g/m^3$, and with both EKMA Mix and NO_x was 20 $\mu g/m^3$. Particulate sulfur production was more variable across days and across chambers than was ozone production. Whereas definite trends were observed in ozone production at various HC and NO_x concentrations (see Figures 5 and 7), trends are not as apparent in particulate sulfur production. Enhanced particulate sulfur concentrations did generally occur at the conditions of no added HC and

Hydrocarbon Concentration, ppmC	0	0.05	0.10	0.20	0.40
2.00	0.066[c]	0.223[d]	0.304[e]	0.237[f]	0.021[g]
1.00	0.065[c]	0.201[d]	0.152[e]	0.109[f]	0.007[g]
0.50	0.071[c]	0.152[d]	0.055[e]	0.023[f]	0.003[g]
0.25	0.053[c]	0.107[d]	0.029[e]	0.011[f]	0.002[g]
0	0.085[a]	0.028[b]	0.009[b]	0.005[b]	0.003[b]

NO_x Concentration, ppm

[a]Run 59, 8-2-78, entry represents a four-chamber mean.
[b]Run 77, 10-2-78.
[c]Run 79, 10-7-78.
[d]Run 80, 10-8-78.
[e]Run 81, 10-9-78.
[f]Run 75, 9-26-78.
[g]Run 78, 10-3-78.

Figure 7. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm SO_2. Maximum ozone concentrations in ppm are identified for each experiment.



[a]Run 59, 8-2-78 entry represents a four chamber mean.
[b]Run 77, 10-2-78.
[c]Run 79, 10-7-78.
[d]Run 80, 10-8-78.
[e]Run 81, 10-9-78.
[f]Run 75, 9-26-78.
[g]Run 78, 10-3-78.
[h]NA = Not Available.

Figure 8. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm SO_2. For each experiment maximum particulate sulfur concentration is expressed in $\mu g/m^3$ and estimated $[\overline{OH}]_{9\text{-}16}$ (enclosed in parentheses) is expressed in ppt.

NO_x and at the conditions that gave rise to the highest $[O_3]_{max}$. It appears that precursors of particulate sulfur are depleted at both extrememly high and extremely low HC/NO_x ratios. The $[\overline{OH}]_{9-16}$ data, also shown in Figure 8, are consistent with this hypothesis.

Mean OH concentrations were estimated by following the butane concentrations over the time period 0900-1600 EST. These concentrations ranged from less than 0.005 to 0.16 ppt and averaged 0.06 ppt. Although the estimation technique is subject to considerable uncertainty, it is believed that several trends are apparent. At low NO_x concentrations (0.00 and 0.05 ppm) the average [OH] decreases with increasing [HC]. This is believed due to increased scavenging of the background OH by added HC. At moderate NO_x concentrations, the average [OH] is enhanced due to the net generation of OH by photochemical reactions involving HC and NO_x. Note that above 0.25 ppm HC at 0.10 and 0.20 ppm NO_x, the average [OH] passes through a maximum with increasing [HC]. At the high NO_x concentration, the average OH is reduced due to increased scavenging of OH by the added NO_x. With the exception of the effects of background OH, these observations are consistent with model predictions of Figure 6.

As indicated previously in the SO_2 decay experiments, SO_2 is expected to be lost from the chemical system by deposition on the walls. Based on the average half-life of 9.2 hours found in the decay experiments, approximately 50 percent of the initially injected SO_2 is expected to be present 9 hours after sunrise at 1700 EST. This is in good agreement with the average observed value of 59 percent. In general, no trends in sulfur balance were evident across the 25-experiment matrix.

The addition of SO_2 to an irradiated air parcel results in significant production of condensation nuclei. The EKMA Mix-NO_x system generally produced little or no detected CN; whereas, the addition of SO_2 produced 10^3 to 10^5 CN cm^{-3}.

The data collected through 9 October 1978 do not permit an assessment of the impact of added SO_2 on the ozone-producing potential of the EKMA Mix-NO_x system. An experiment was conducted on 10 October 1978 to address this point. In this experiment identical initial concentrations of EKMA Mix (2.00 ppmC) and NO_x (0.05 ppm) were added to purified air in each of the four chambers. Sulfur dioxide was introduced into two chambers to a target initial concentration of 1.0 ppm, and SO_2 was not added to the other two chambers. The $[O_3]_{max}$

achieved with no added SO_2 were 0.264 and 0.291 ppm. With added SO_2 the $[O_3]_{max}$ were 0.219 and 0.236 ppm. Thus, the addition of SO_2 acted to reduce the ozone production by 18 percent for the experimental conditions employed.

EXPERIMENTS WITH H_2S, EKMA MIX, AND NO_x

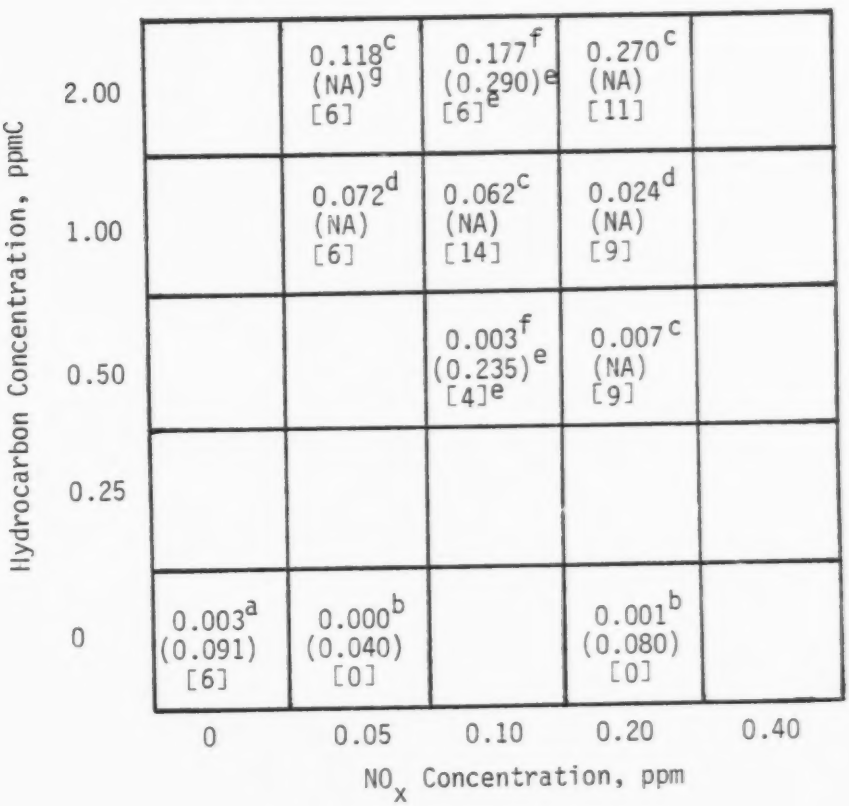
Hydrogen sulfide is expected to be present at high concentrations in gasifier effluent. Previous work at RTI has indicated that H_2S is not highly photochemically reactive in terms of O_3 production. The apparent conversion of NO_2 to NO has been observed upon adding H_2S to a mixture of NO and NO_2. The impact of this effect on reacting photochemical HC/NO_x systems was found to be substantial in the current study.

Eleven experiments identified in the experimental matrix shown in Figure 9 were conducted with 1 ppm H_2S added in each case. Replicate experiments were performed in selected cases. Maximum ozone concentrations, $[SO_2]_{max}$, and $[TPS]_{max}$ observed in these experiments as well as the dates when they were performed are identified in Figure 9.

The $[O_3]_{max}$ display similar trends to those observed previously (see Figures 5 and 7). Although the environmental conditions for the experiments displayed in these figures are not identical, comparison of the results suggests that the presence of H_2S reduces the O_3 forming potential of the EKMA Mix-NO_x system.

Substantial amounts of SO_2 were produced in these experiments. As indicated in Figure 9, for the two experiments conducted with H_2S, EKMA Mix, and NO_x where SO_2 data are available, the average $[SO_2]_{max}$ was 0.26 ppm. This corresponds to an average SO_2 yield of 58 percent. For the case where H_2S was irradiated in the absence of both added EKMA Mix and NO_x, the average $[SO_2]_{max}$ and SO_2 yield were 0.09 ppm and 24 percent. It should be noted that the SO_2 yields are influenced by wall losses of H_2S, SO_2, TPS, and any other product sulfur species. The sulfur balance is an indicator of the accountable reactant and product sulfur. The average sulfur balance for the experiments identified in Figure 9 is 72 percent.

In spite of the formation of SO_2, the maximum concentrations of total particulate sulfur were low, ranging up to 14 $\mu g/m^3$. Thus, the majority of the accountable product sulfur was detected as SO_2.



[a]Run 115, 6-27-79, entry represents a four-chamber mean.
[b]Run 85, 10-17-78.
[c]Run 83, 10-12-78.
[d]Run 84, 10-13-78.
[e]Run 86, 10-18-78.
[f]Mean of results from Run 84, 10-13-78 and Run 86, 10-18-78.
[g]NA = Not Available.

Figure 9. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm H_2S. For each experiment, maximum ozone concentration is expressed in ppm, maximum SO_2 concentration (enclosed in parentheses) is expressed in ppm, and maximum particulate sulfur concentration [enclosed in brackets] is expressed in $\mu g/m^3$.

Whereas the experiments identified in Figure 9 were conducted with 20 percent NO_2, on 10-17-78 two matched experiments were conducted with 20 percent NO_2 and two experiments were conducted with most of initial NO_x added as NO_2. In both high-NO_2 cases, NO_2 was rapidly converted to NO with the fastest rate occurring during the hour between the 0700 and 0800 EST measurements. In the chambers, where most of the initial NO_x had been comprised of NO_2, sufficient NO_2 was converted to NO such that the NO_2 and NO concentrations experienced crossover. Thus the presence of H_2S, apparently promoted the rapid conversion of NO_2 to NO, and very little ozone was formed in these experiments.

By the end of the experiment, 53 to 60 percent of the initially present H_2S could be accounted for. The amount of H_2S that reacted in these experiments increased with increasing initial NO_2 concentrations. Maximum SO_2 concentrations also increased with increasing initial NO_2 concentrations. In addition, the [H_2S] displayed half-lives of 12 and 18 hours.

Since the experiments identified in Figure 9 do not permit clear assessment of the impact of added H_2S on the bevavior of the EKMA Mix-NO_x system, on 10-18-78, two experiments were conducted with added H_2S and two matched experiments were conducted in its absence. The four experiments were designed to permit assessment of the impact of H_2S on reacting HC-NO_x systems at two different HC/NO_x ratios. Initial conditions as well as selected results from these experiments are summarized in Table 7. Concentration profiles of O_3, NO, and NO_2 are illustrated in Figure 10 for the low reactivity experiments conducted in Chambers 1 and 2 (at an initial HC/NO_x ratio of 5) and in Figure 11 for the high reactivity experiments conducted in Chambers 3 and 4 (at an initial HC/NO_x ratio of 20).

In the low reactivity system, the presence of H_2S exerted a major influence on the behavior of the HC-NO_x system. The presence of H_2S prevented the occurrence of NO-NO_2 crossover and also prevented the accumulation of ozone. In the absence of H_2S, a maximum O_3 concentration of 0.088 ppm was achieved in Chamber 1; whereas, in the similar system of Chamber 2, but in the presence of H_2S, a maximum O_3 concentration of only 0.003 ppm was found.

The impact of H_2S was less pronounced for the high reactivity system. The presence of H_2S resulted in a slight reduction in the NO photooxidation rate: NO-NO_2 crossover occurred 15 minutes later in Chamber 4 than in Cham-

TABLE 7. INITIAL CONDITIONS AND SELECTED RESULTS FROM SMOG CHAMBER EXPERIMENTS CONDUCTED WITH H_2S AND HC-NO_x SYSTEMS ON 18 OCTOBER 1978

Chamber No.	1	2	3	4
$[H_2S]_{initial}$, ppm	0	0.90	0	0.94
$[C_3H_6]_{initial}$, ppmC	0.14	0.13	0.57	0.56
$[n\text{-}C_4H_{10}]_{initial}$, ppmC	0.41	0.35	1.59	1.57
$[NMHC]_{initial}$, ppmC	0.55	0.48	2.15	2.13
$[NO_x]_{initial}$, ppm	0.09	0.10	0.11	0.10
$[NMHC]/[NO_x]_{initial}$	5.8	4.8	20.5	21.5
Time of NO_2-NO crossover, EST	1007	-	0842	0858
$[O_3]_{max}$, ppm	0.088	0.003	0.346	0.169
$[H_2S]$ @ 1600 EST, ppm	0	0.47	0	0.46
f H_2S @ 1600 EST[a]	-	0.52	-	0.49
$[SO_2]_{max}$, ppm	0	0.24	0	0.29
SO_2 yield[b]	-	0.56	-	0.60
$[TPS]_{max}$, $\mu g/m^3$ (ppbS)	0	4.3 (3.3)	0	5.7 (4.4)
Sulfur Balance @ 1600 EST	-	0.79	-	0.80

[a]Fraction of accountable H_2S at the 1600 EST hour.

[b]Molecules of SO_2 formed per molecules of H_2S lost.

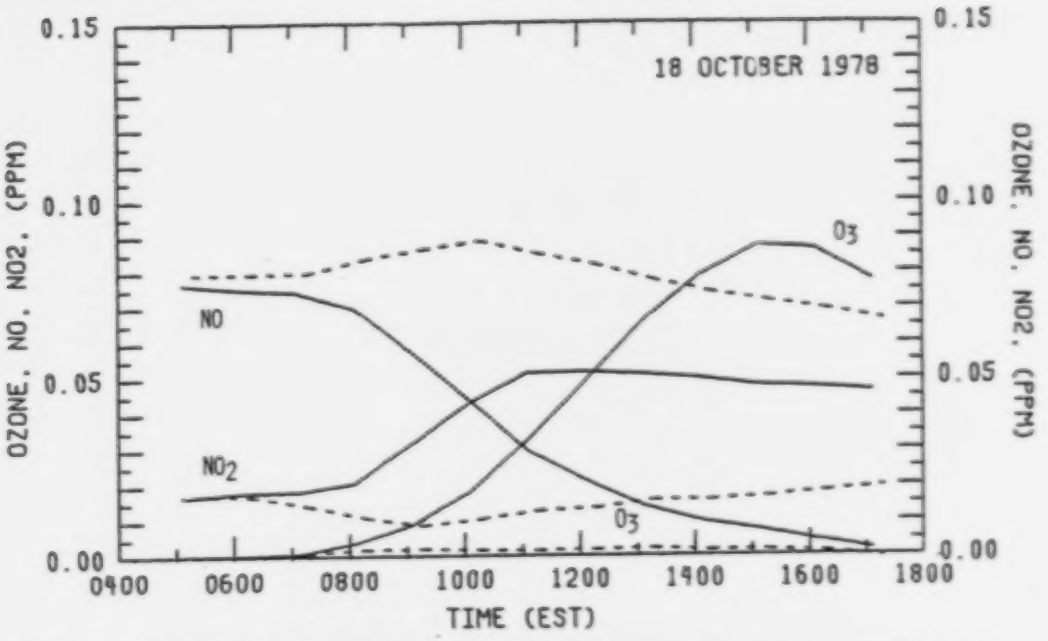


Figure 10. Concentration profiles of NO, NO_2, and O_3 for experiments conducted at target HC/NO_x ratio of 5.0 on 18 October 1978. Initial conditions RTI Chamber 1 (solid lines): 0.55 ppmC NMHC (C_3H_6 and $n-C_4H_{10}$), 0.08 ppm NO, and 0.02 ppm NO_2. Initial conditions RTI Chamber 2 (dashed lines): 0.48 ppmC NMHC (C_3H_6 and $n-C_4H_{10}$), 0.08 ppm NO, 0.02 ppm NO_2, and 0.90 ppm H_2S.

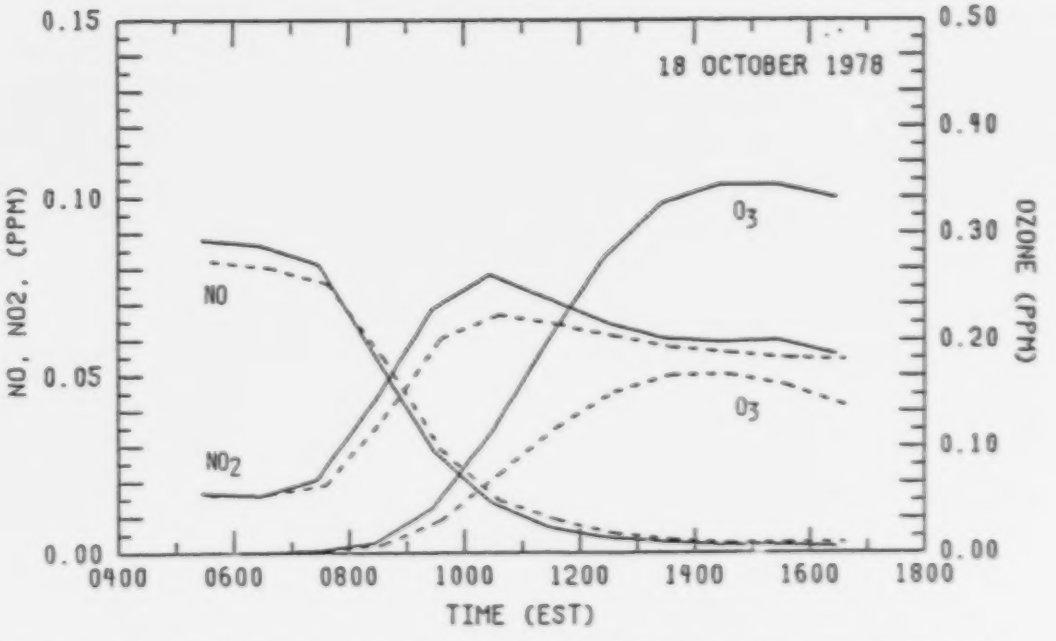


Figure 11. Concentration profiles of NO, NO_2, and O_3 for experiments conducted at target HC/NO_x ratio of 20.0 on 18 October 1978. Initial conditions RTI Chamber 3 (solid lines): 2.16 ppmC NMHC (C_3H_6 and $n-C_4H_{10}$), 0.09 ppm NO, and 0.02 ppm NO_2. Initial conditions RTI Chamber 4 (dashed lines): 2.13 ppmC NMHC (C_3H_6 and $n-C_4H_{10}$), 0.08 ppm NO, 0.02 ppm NO_2, and 0.94 ppm H_2S.

ber 3. Although the presence of H_2S did not prevent the accumulation of ozone as it had done in the low reactivity experiment, the accumulation of ozone was reduced. In the absence of H_2S, a maximum O_3 concentration of 0.346 ppm was achieved in Chamber 3; whereas, in the similar system of Chamber 4, but in the presence of H_2S, a maximum O_3 concentration of 0.169 ppm was found.

By the end of the experiments, 49 and 52 percent of the initially present H_2S could be accounted for. Slightly more H_2S was consumed in the experiment conducted with the high reactivity HC-NO_x system. The [H_2S] displayed half-lives of 12 and 14 hours.

Sulfur dioxide was the major detected product of H_2S oxidation. The larger of the two maximum SO_2 concentrations was achieved in the experiment conducted with the high reactivity HC-NO_x system. In addition, the SO_2 yield was slightly higher in the higher reactivity system. These SO_2 yields were substantially higher than those found on the previous day, where mixtures of purified air, NO_x, and H_2S were irradiated in the absence of added hydrocarbons.

The fate of H_2S in the troposphere is not well understood. Since H_2S does not absorb light at wavelengths greater than 290 nm (11), the photolysis of H_2S is not expected to occur within the troposphere. Thermal reactions of H_2S with NO or NO_2 are not significant.

Although H_2S is known to react with ozone, the reaction is also slow (12). In the RTI smog chambers on 17 October 1978, H_2S acted to promote the reduction of NO_2 to NO under irradiation. In the RTI smog chambers on 18 October 1978 with two different HC-NO_x systems, H_2S acted to slow the NO photooxidation rate and to inhibit strongly the formation of ozone. These findings suggest that H_2S was reacting with reactive species produced in the various photochemical systems.

In the troposphere, the major fate of H_2S is expected to be reaction with hydroxyl radicals (13). The OH radical abstracts an hydrogen from H_2S forming the HS radical and water.

$$H_2S + OH \longrightarrow HS + H_2O \qquad (1)$$

The rate constant for this reaction has been reported to be 0.46×10^6 ppm^{-1} hr^{-1} (14). The fate of the HS radical produced in reaction (1) may determine the tropospheric fate of the sulfur in H_2S. In a recent laboratory study performed in air, the HS radical was found to proceed directly to SO_2 (15).

Thus, for every H_2S molecule attacked by OH, an SO_2 molecule is expected with a yield of unity.

Hydroxyl radicals are considered to be the dominant reactive species in most photochemical smog systems. Thus, in the experiments conducted with the HC-NO_x-H_2S systems it is likely that reaction (1) exerted a major influence on the fate of H_2S. Based on the apparent loss of H_2S during the HC-NO_x-H_2S experiments, mean OH concentrations during the 10-hour irradiation period are approximately 0.13 ppt. This value is in reasonable agreement with the OH concentrations of 0.08 ppt estimated from the butane data and with those predicted by computer modeling (see Figure 6).

The apparent loss of H_2S can be used along with OH concentrations based on the leak-corrected n-butane behavior to estimate a rate constant for the H_2S-OH reaction. This estimate, 0.83×10^6 ppm^{-1} hr^{-1}, is an upper limit value, since reaction with OH as well as wall losses or other factors could have influenced the behavior of H_2S. This value agrees within a factor of two with the previously noted published value.

In these experiments the SO_2 yield was approximately 0.6. Since SO_2 may have been lost by deposition on the chamber walls, this value may be considered to be the lower limit SO_2 yield for the studied HC-NO_x-H_2S systems. This value is consistent with a mechanism involving OH attack producing HS, followed by SO_2 formation.

Hydrogen sulfide also reacts with atomic oxygen (16, 17). This reaction may proceed via abstraction or addition.

$$H_2S + O(^3P) \longrightarrow HS + OH \qquad (2a)$$

$$H_2S + O(^3P) \longrightarrow [H_2SO]^* \longrightarrow HSO + H \qquad (2b)$$

Although the rate constant for reaction (2) has been reported to be 2.5×10^3 ppm^{-1} hr^{-1} (16), resolution of the relative importance of pathways (2a) and (2b) is a matter of current investigation (17).

Under most conditions in the troposphere, the concentration of atomic oxygen is too low to be competitive with OH. However, since atomic oxygen is produced by the photolysis of both O_3 and NO_2, reaction (2) may have been significant in the irradiation of purified air mixtures of NO_x and H_2S. In

the current study, a large difference in SO_2 yields was noted for the NO_x-H_2S experiments in comparison to the HC-NO_x-H_2S experiments. This could suggest that reaction (2b) was important for the NO_x-H_2S system, or that if reaction (2a) was favored, the competitive reactions that determined the fate of the HS radical were different in the two different chemical systems.

It is difficult to account for the conversion of NO_2 to NO in the presence of H_2S, based on established chemistry. It is known that NO_2 absorbs light of wavelengths between 400 and 700 nm to form an excited molecule, NO_2* (18). Oxygen, N_2, and H_2O in ambient air act to quench this species. If a reaction such as reaction (3) is feasible and competitive with the quenching reactions, it would provide a mechanism for the conversion of NO_2 to NO under irradiation.

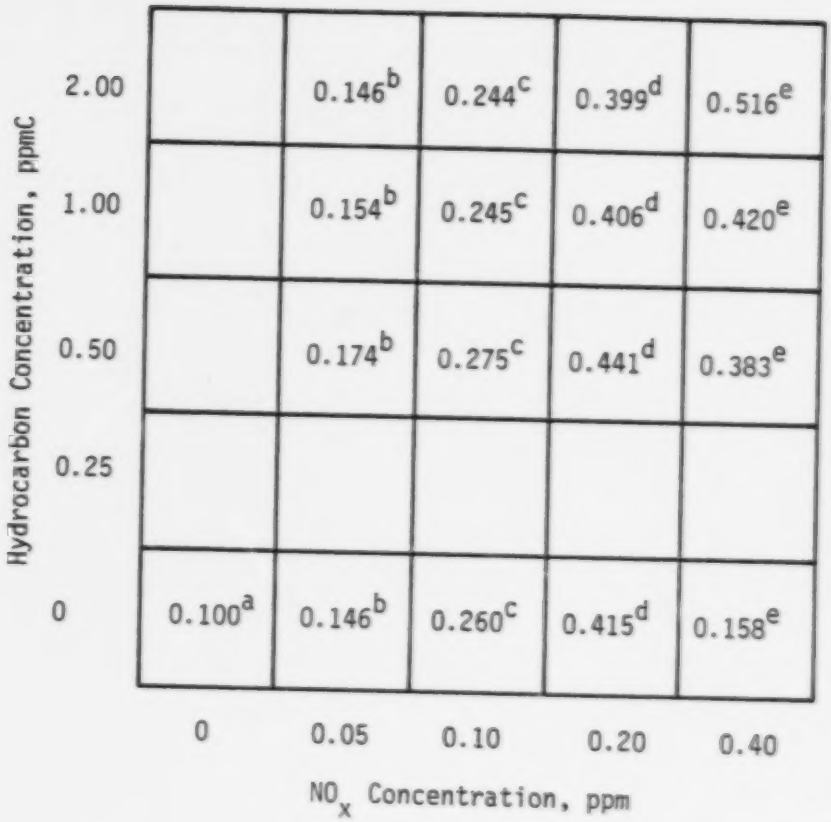
$$NO_2^* + H_2S \longrightarrow H_2SO + NO \qquad (3)$$

Findings in the current study do not necessarily resolve the "correct" photooxidation mechanism for H_2S. They do provide clues to permit its elucidation. For example, the current study suggests that SO_2 is a product of the photooxidation of H_2S in air mixtures of NO_x and H_2S and of HC, NO_x, and H_2S. Since small amounts of particulate sulfur (assumed to be sulfate) were found, it is unlikely that H_2S is photooxidized directly to sulfate. Although sulfate may be the ultimate fate of H_2S in the troposphere, it is anticipated that SO_2 is formed initially, and that sulfates are subsequently produced by the usual tropospheric SO_2 oxidation processes (19). Refinement of detailed aspects of the H_2S photooxidation mechanism must await further investigation.

EXPERIMENTS WITH CH_3SH, EKMA MIX, AND NO_x

Seventeen experiments identified in the experimental matrix shown in Figure 12 were conducted with 1 ppm CH_3SH added in each case. Maximum ozone concentrations observed in these experiments as well as the dates when they were performed are identified in Figure 12. The corresponding $[SO_2]_{max}$, $[TPS]_{max}$, and estimated $[\overline{OH}]_{9\text{-}16}$ are identified in Figure 13.

The presence of CH_3SH alters the ozone production surface of the EKMA Mix-NO_x system (see Figures 5 and 7 for comparison). For the experiments conducted with purified air and CH_3SH, the presence of CH_3SH does not appreci-



[a]Run 116, 6-28-79, entry represents a four-chamber mean.
[b]Run 89, 10-21-78.
[c]Run 90, 10-22-78.
[d]Run 91, 10-23-78.
[e]Run 92, 10-25-78.

Figure 12. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm CH_3SH. Maximum ozone concentrations in ppm are identified for each experiment.

Hydrocarbon Concentration, ppmC	0	0.05	0.10	0.20	0.40
2.00		0.345[b] (23) [0.00]	0.265[c] (61) [NA]	0.330[d] (57) [NA]	0.275[e] (18) [0.10]
1.00		0.375[b] (26) [0.00]	0.300[c] (88) [0.10]	0.320[d] (93) [NA]	0.260[e] (122) [0.11]
0.50		0.305[b] (37) [0.01]	0.300[c] (113) [0.11]	0.325[d] (115) [NA]	0.300[e] (168) [0.17]
0.25					
0	0.286[a] (8) [NA][f]	0.340[b] (51) [NA]	0.305[c] (174) [NA]	0.315[d] (160) [NA]	0.240[e] (144) [NA]

NO_x Concentration, ppm

[a]Run 116, 6-28-79, entry represents a four-chamber mean.
[b]Run 89, 10-21-78.
[c]Run 90, 10-22-78.
[d]Run 91, 10-23-78.
[e]Run 92, 10-25-78.
[f]NA = Not Available.

Figure 13. Experimental matrix conducted with EKMA Mix, NO_x and 1 ppm CH_3SH. For each experiment maximum SO_2 concentration is expressed in ppm, maximum particulate sulfur concentration (enclosed in parentheses) is expressed in $\mu g/m^3$, and estimated $[\overline{OH}]_{9-16}$ [enclosed in brackets] is expressed in ppt.

ably effect the $[O_3]_{max}$. For the CH_3SH-NO_x experiments, the largest $[O_3]_{max}$ occurred at the target initial $[NO_x]$ of 0.20 ppm. This behavior is consistent with previous observations (3). The addition of EKMA Mix does not appreciably influence ozone production at 0.05, 0.10, or 0.20 ppm NO_x. At the target initial $[NO_x]$ of 0.40 ppm, however, increased $[O_3]_{max}$ occurs with increasing initial EKMA Mix concentrations. Photooxidation of NO by the CH_3SH-NO_x system is extremely rapid and considerably faster than the EKMA Mix-NO_x system. In addition, reaction products of the CH_3SH-NO_x system tend to remove NO_x from the reactive matrix more rapidly than occurs in the EKMA Mix-NO_x system. It is likely that these factors were dominant in influencing the ozone production at the high HC (and low NO_x conditions). In contrast, at the highest initial NO_x concentration it is likely that the CH_3SH-NO_x system was sufficiently inhibited to permit the influence of added EKMA Mix to be reflected in the ozone production.

In these experiments, methanethiol was consumed rapidly. On the average for the 16 CH_3SH-EKMA Mix-NO_x experiments, 3.1 hours of irradiation past sunrise was required for one-half of the initially present CH_3SH to be consumed. The apparent loss of CH_3SH can be used along with OH concentrations based on the leak-corrected n-butane and leak- and ozone-corrected propene behavior to estimate a rate constant for the CH_3SH-OH reaction. These estimates, 11×10^6 and 7.4×10^6 $ppm^{-1}hr^{-1}$, are upper limit values, since reaction with OH as well as wall losses or other factors could have influenced the behavior of CH_3SH. These values agree within a factor of 3 with the published value of 3.0×10^6 $ppm^{-1}hr^{-1}$ (20).

Substantial amounts of SO_2 were produced. As indicated in Figure 13, SO_2 production does not reflect any clear trends across different initial concentrations, and the presence of EKMA Mix does not appreciably influence SO_2 production. Across the matrix, the average $[SO_2]_{max}$ is 0.305 ± 0.034 ppm, the average SO_2 yield is 36 percent, and the average sulfur balance is 48 percent.

In contrast to SO_2 production, the production of particulate sulfur does display definite trends with initial concentrations. For the experiments conducted with purified air and CH_3SH, small amounts of particulate sulfur were formed. For the CH_3SH-NO_x experiments the largest $[TPS]_{max}$ occurred at the target initial $[NO_x]$ of 0.10 ppm. In general, the addition of EKMA Mix acts to reduce particulate sulfur formation at all NO_x concentrations. Since the SO_2 + OH reaction is primarily responsible for particulate sulfur (speci-

fically sulfate) formation, the addition of EKMA Mix may act as an OH scavenger to reduce the average OH concentration and hence the TPS concentrations. In those cases where $[\overline{OH}]_{9\text{-}16}$ could be estimated, the $[\overline{OH}]_{9\text{-}16}$ and the $[TPS]_{max}$ display similar behavior. This is consistent with the previous hypothesis of OH scavenging by added hydrocarbons.

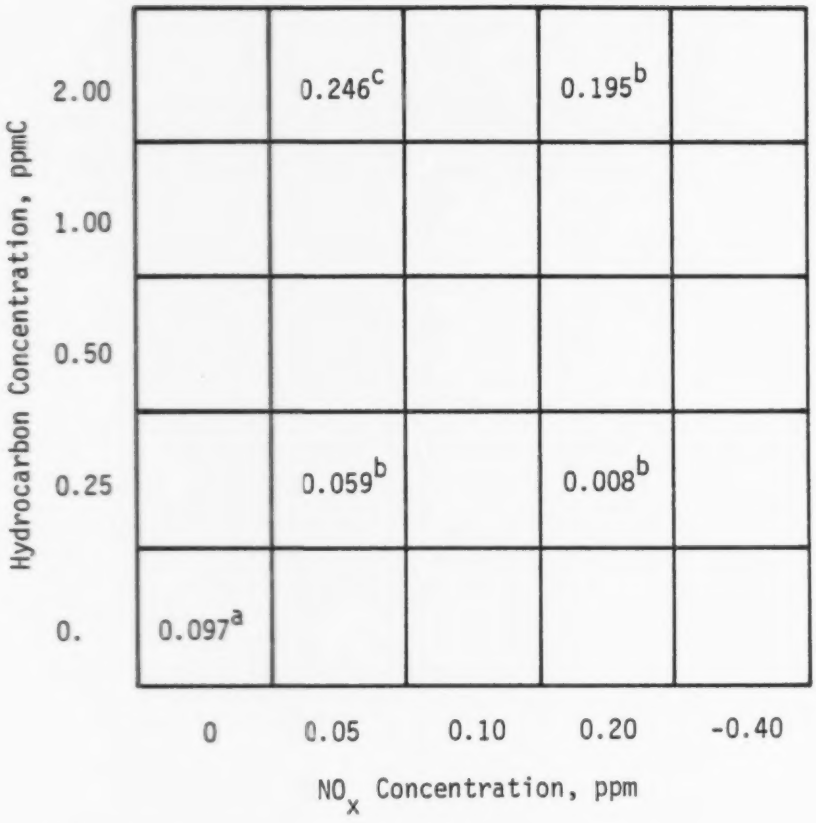
EXPERIMENTS WITH COS, EKMA MIX, AND NO_x

Although carbonyl sulfide is expected at moderate concentrations in gasifier effluent, previous studies at RTI have suggested that COS is relatively unreactive (3). This was confirmed in the current study.

Five experiments identified in the experimental matrix shown in Figure 14 were conducted with 1 ppm COS added in each case. Replicate experiments were performed in selected cases. Maximum ozone concentrations observed in these experiments as well as the dates when they were performed are identified in Figure 14. The $[O_3]_{max}$ shown in this figure display similar trends to those observed previously. (See Figures 5 and 7.)

The data collected on 2 November 1978 do not permit an assessment of the impact of added COS on the ozone-producing potential of the EKMA Mix-NO_x system. An experiment was conducted on 3 November to address this point. In this experiment identical initial concentrations of EKMA Mix (2.00 ppmC) and NO_x (0.05 ppm) were added to purified air in each of the four chambers. Carbonyl sulfide was introduced into two chambers to a target initial concentration of 1.0 ppm, and COS was not added to the other two chambers. The $[O_3]_{max}$ achieved with no added COS were 0.237 and 0.239 ppm. With added COS the $[O_3]_{max}$ were 0.248 and 0.239 ppm. Thus, the addition of COS had no effect on ozone production for the experimental conditions employed.

Carbonyl sulfide appears to be unreactive under all the test conditions employed in the current study. The concentration of COS dropped slightly during each experiment but did not exceed that attributed to chamber leakage based on the simultaneous behavior of methane. Sulfur dioxide was never detected in any experiments involving COS. The $[TPS]_{max}$ was very low: the largest concentration observed in COS experiments was 6.0 $\mu g/m^3$. The unreactive character of COS is also reflected in the sulfur balances which displayed an overall average of 95 percent.



[a]Run 114, 6-26-79, entry represents a four-chamber mean.
[b]Run 95, 11-2-78.
[c]Mean of results from Run 95, 11-2-78 and Run 96, 11-3-78.

Figure 14. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm COS. Maximum ozone concentrations in ppm are identified for each experiment.

EXPERIMENTS WITH THIOPHENE, EKMA MIX, AND NO_x

Eight experiments identified in the experimental matrix shown in Figure 15 were conducted with 1 ppm thiophene added in each case. Maximum ozone concentrations and estimated $[\overline{OH}]_{9\text{-}16}$ for these experiments, are identified in this figure. The corresponding $[SO_2]_{max}$, $[COS]_{max}$, and $[TPS]_{max}$ are identified in Figure 16.

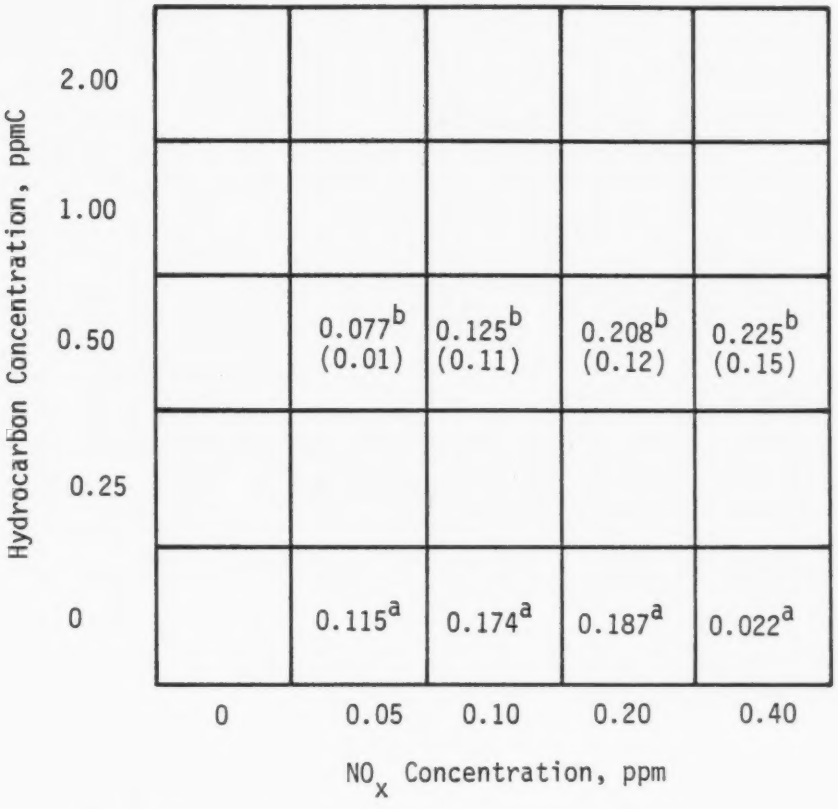
For the thiophene-NO_x experiments, the largest $[O_3]_{max}$ occurred at the target initial $[NO_x]$ of 0.20 ppm. At the initial $[NO_x]$ of 0.05 and 0.10 ppm, the addition of 0.50 ppmC EKMA Mix resulted in a small reduction in ozone production. At 0.20 and 0.40 ppm, however, the presence of EKMA Mix enhanced ozone production appreciably. At 0.50 ppm EKMA Mix both $[O_3]_{max}$ and $[\overline{OH}]_{9\text{-}16}$ increased with increasing initial $[NO_x]$, and the largest values occurred at 0.40 ppm NO_x. This behavior is similar to that described earlier for the experiments conducted with CH_3SH.

Appreciable amounts of thiophene were consumed in these experiments. The apparent loss of thiophene can be used along with OH concentrations based on the leak-corrected n-butane behavior to estimate a rate constant for the thiophene-OH reaction. This estimate, 1.1×10^6 $ppm^{-1}hr^{-1}$, is an upper limit value, since reaction with OH as well as wall losses or other factors could have influenced the behavior of thiophene. This value is in excellent agreement with the value of 1.2×10^6 $ppm^{-1}hr^{-1}$ determined in unbuffered solution (21).

Sulfur dioxide, COS, and particulate sulfur were found as reaction products. As indicated in Figures 15 and 16, the maximum concentrations of O_3, SO_2, COS, and TPS generally follow similar trends across different initial conditions. Sulfur dioxide was the major primary reaction product with an average yield of 52 percent. Across the matrix the average sulfur balance was 81 percent.

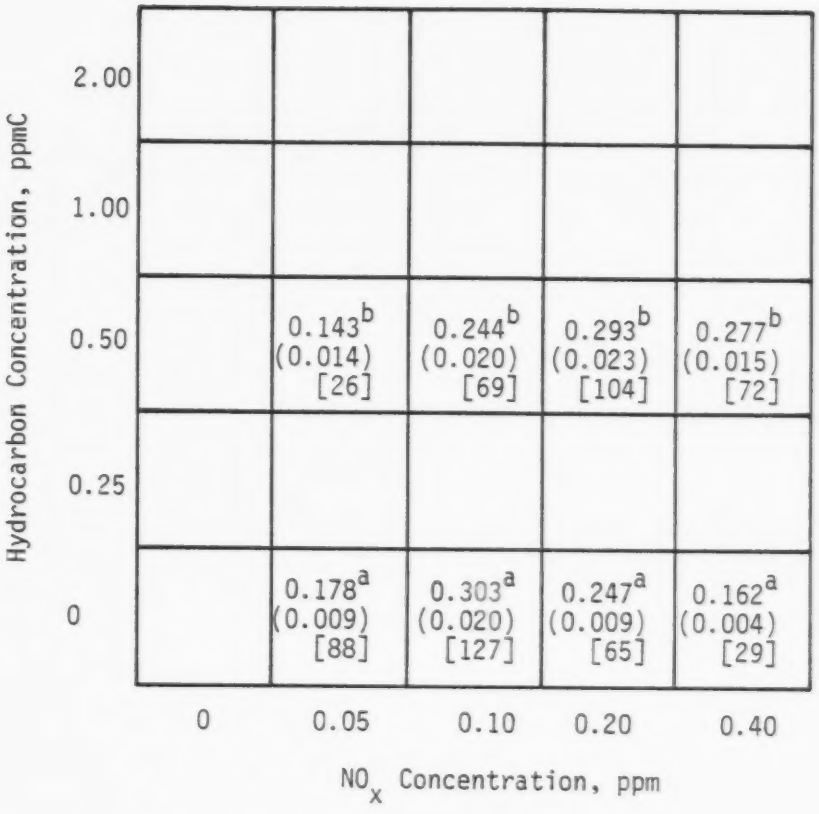
SAME-DAY EXPERIMENTS WITH SO_2, H_2S, THIOPHENE, AND CH_3SH

The same-day experiments conducted with SO_2, H_2S, thiophene, and CH_3SH are identified in Figure 17. The five points on the experimental matrix were chosen at initial EKMA Mix/NO_x conditions of 0.0 ppmC/0.00 ppm, 0.25 ppmC/0.05 ppm, 0.25 ppmC/0.40 ppm, 2.0 ppmC/0.05 ppm, and 2.0 ppmC/0.40 ppm. Four



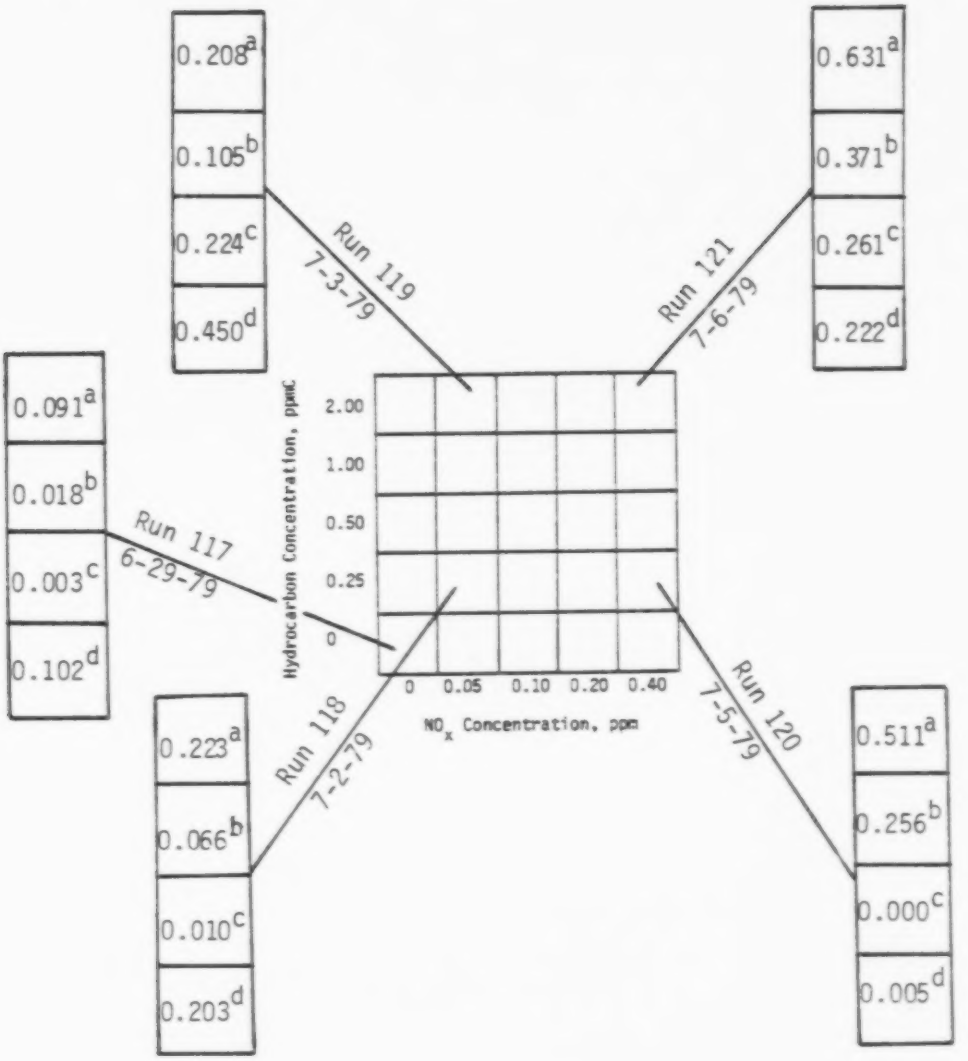
[a]Run 97, 11-5-78.
[b]Run 98, 11-6-78.

Figure 15. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm thiophene. For each experiment $[O_3]_{max}$ is expressed in ppm and estimated $\overline{[OH]}_{9-16}$ (enclosed in parentheses) is expressed in ppt.



[a]Run 97, 11-5-78.
[b]Run 98, 11-6-78.

Figure 16. Experimental matrix conducted with EKMA Mix, NO_x, and 1 ppm thiophene. For each experiment $[SO_2]_{max}$ is expressed in ppm, $[COS]_{max}$ (enclosed in parentheses) is expressed in ppm, and $[TPS]_{max}$ [enclosed in brackets] is expressed in $\mu g/m^3$.



[a] CH_3SH added to matrix conditions.
[b] Thiophene added to matrix conditions.
[c] H_2S added to matrix conditions.
[d] SO_2 added to matrix conditions.

Figure 17. Maximum ozone concentrations expressed in ppm for each of five same-day experiments conducted with SO_2, H_2S, thiophene, and CH_3SH.

experiments were conducted simultaneously at each point on the matrix with 1 ppm SO_2 added in one chamber, 1 ppm H_2S in another, 1 ppm thiophene in another, and 1 ppm CH_3SH in the remaining chamber. This design "factors out" environmental conditions at each set of initial conditions, and permits same-day comparison of the effects of added SO_2, H_2S, thiophene, and CH_3SH to each of four reacting EKMA Mix-NO_x systems. The choice of initial HC and NO_x conditions permits comparison at HC-rich, NO_x-rich, and at high-O_3-producing conditions. In addition, comparisons can be drawn between those experiments conducted at the same initial [EKMA Mix] (2.0 and 0.25 ppmC) and those at the same initial [NO_x] (0.40 and 0.05 ppm). Maximum ozone concentrations for these experiments are identified in Figure 17. Previous results have indicated that the addition of SO_2 to the EKMA Mix-NO_x system reduces ozone production by approximately 18 percent. Thus, the impact of added H_2S, thiophene, and CH_3SH on ozone production can be roughly evaluated by comparing the results of experiments involving these compounds with those of the SO_2-EKMA Mix-NO_x experiments.

As indicated in the figure (Run 117), ozone production by CH_3SH and purified air is not significantly different than that for SO_2 and purified air. Both thiophene and H_2S, however, act to reduce ozone production.

At the 0.25 ppmC/0.05 ppm NO_x condition (Run 118), ozone production is enhanced over that of the purified air experiments in every case. The addition of the sulfur species to this HC-NO_x system resulted in similar ozone behavior to that observed previously when the sulfur species were added to purified air. The experiments with added SO_2 and added CH_3SH had nearly identical $[O_3]_{max}$; whereas ozone production was reduced by the presence of thiophene and H_2S.

At the 2.0 ppmC/0.05 ppm NO_x condition (Run 119), the presence of H_2S, thiophene, and CH_3SH acted to reduce ozone production in comparison to the SO_2-EKMA Mix-NO_x system. In this case thiophene was the most effective inhibitor.

At the 0.25 ppmC/0.40 ppm NO_x condition (Run 120), ozone production in the experiments with added SO_2 and added H_2S was apparently inhibited by the relatively high NO_x concentrations. The presence of thiophene and CH_3SH increased the actual carbon to NO_x ratio and enhanced ozone production appreciably. The behavior was similar at the 2.0 ppmC/0.40 ppm NO_x condition (Run 121), except that the relative enhancement was not as large.

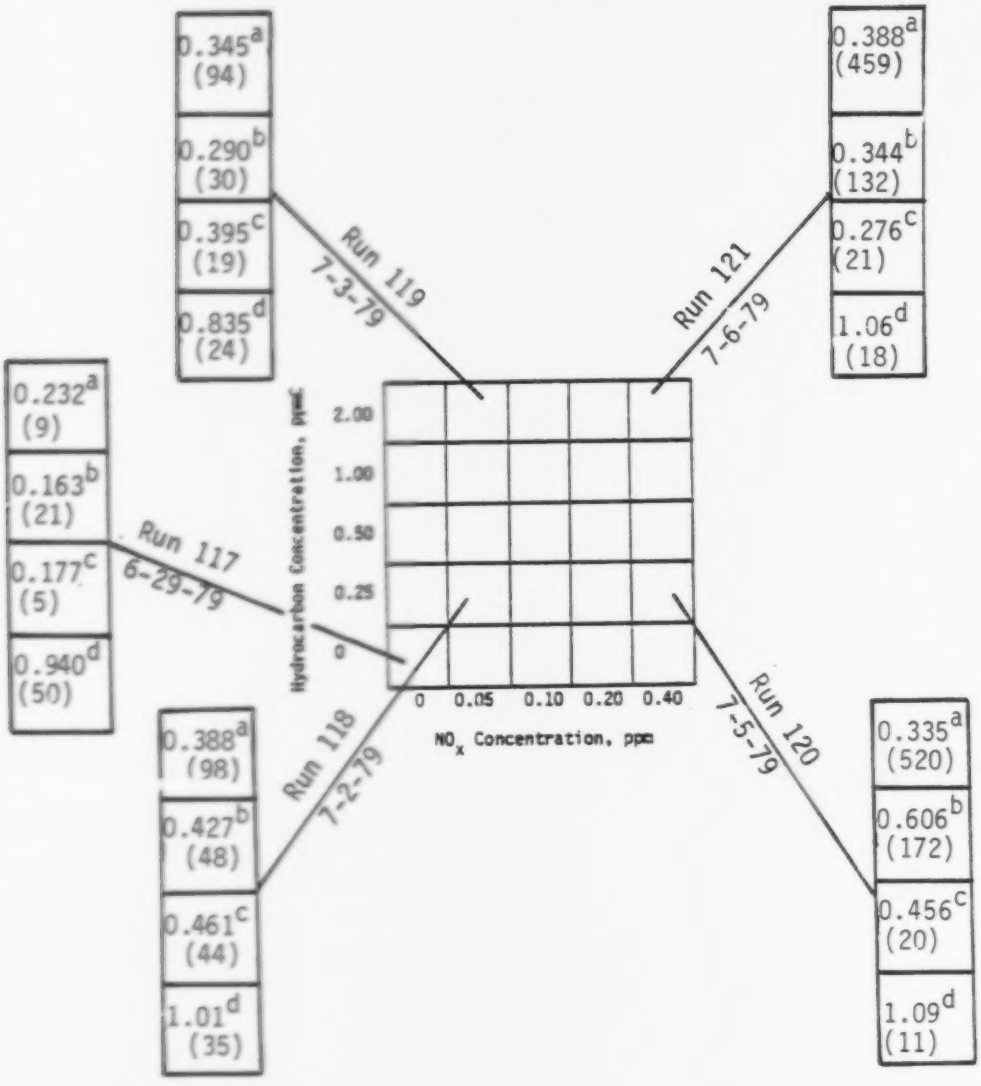
These observations suggest that the release of thiophene or CH_3SH into a NO_x-rich air parcel can result in appreciable ozone production; whereas, H_2S release can reduce ozone production. In a fresh urban-type air parcel the effects can be similar for thiophene or CH_3SH emissions. In a HC-rich air parcel the presence of H_2S, thiophene, or CH_3SH can inhibit ozone production.

Maximum SO_2 concentrations and maximum particulate sulfur concentrations are identified in Figure 18. Irradiation of purified air and each sulfur species (except SO_2) produced appreciable SO_2 but little particulate sulfur. The SO_2 produced by H_2S, thiophene, and CH_3SH probably resulted from the reaction of each species with background OH that was photochemically generated by chamber contaminants. It is believed that particulate sulfur is produced by the reaction of SO_2 and OH and that the high concentration found in the SO_2 experiment resulted from reaction with background OH. High maximum TPS concentrations were not produced in the other cases, since an additional step was required. In these cases, the background OH and the test compound must first react (which they did as evidenced by the formation of SO_2) permitting the product SO_2 and the background OH to react to form particulate sulfur. However, the delayed production of SO_2 and the low concentration of SO_2 produced did not permit the formation of appreciable particulate sulfur.

For H_2S, thiophene, and CH_3SH the addition of EKMA Mix and NO_x resulted in enhanced SO_2 and particulate sulfur production in comparison to that observed during the irradiation of purified air and the test compound. Sulfur dioxide production depends on both the test compound and the conditions selected for study. For example, $[SO_2]_{max}$ for CH_3SH was essentially independent of initial conditions (at approximately 0.36 ppm). In contrast, SO_2 production by thiophene was sensitive to the initial EKMA Mix and NO_x concentrations, and the $[SO_2]_{max}$ ranged from 0.29 to 0.61 ppm.

Both SO_2 yield and sulfur balances at the time of the $[SO_2]_{max}$ were variable from day-to-day. The average SO_2 yields for H_2S, thiophene, and CH_3SH were 0.52, 0.35, and 0.36. The average sulfur balances for SO_2 and the remaining three test compounds were 45, 64, 56, and 62 percent, respectively.

At 0.05 ppm NO_x the addition of EKMA Mix (from 0.25 to 2.00 ppmC) reduced the $[TPS]_{max}$ in all four cases. Increasing the initial $[NO_x]$ enhanced particulate sulfur production for CH_3SH and thiophene at both EKMA Mix levels. These



[a] CH_3SH added to matrix conditions.
[b] Thiophene added to matrix conditions.
[c] H_2S added to matrix conditions.
[d] SO_2 added to matrix conditions.

Figure 18. Maximum SO_2 concentrations expressed in ppm and maximum particulate sulfur concentrations (enclosed in parentheses) expressed in $\mu g/m^3$ for each of five same-day experiments conducted with SO_2, H_2S, thiophene, and CH_3SH.

results generally suggest that the release of CH_3SH or thiophene into a NO_x-rich air parcel can result in appreciable particulate sulfur production.

Figure 18 also shows that with a single exception, the addition of H_2S, thiophene, or CH_3SH to an irradiated EKMA-NO_x mixture results in the production of more particulate sulfur than is formed by the addition of an equivalent amount of SO_2. This finding indicates that emissions controls aimed at controlling ambient particulate sulfur (sulfate) concentrations should be at least as stringent for H_2S, thiophene, and CH_3SH emissions as they are for SO_2 emissions.

GC/MS ANALYSIS OF REACTANTS AND PRODUCTS

On 6 July 1979 experiments were conducted with SO_2, H_2S, CH_3SH and thiophene in the presence of EKMA mix and NO_x (Run 121). During these experiments samples were collected using Tenax GC sampling cartridges. These samples were analyzed using gas chromatography/mass spectroscopy/computer (GC/MS/COMP) equipped with a non-polar (SE-30) and polar (Carbowax 20 M) stationary phase coated glass capillary columns. The procedure for collection and analysis of vapor-phase organics from an atmosphere is described elsewhere (7, 8).

Upon analysis of the collected samples, the mass spectra of the principle chromatographic peaks were examined to identify potential reaction products. None of the total ion current chromatograms indicated the presence of any major reaction products. Thus, selected ions such as those that are listed in Table 8 were used to construct single ion plots to determine whether the parent compound or reaction products could be detected.

Upon inspection of the total ion current plots, as well as the single ion profiles, for the ions listed in Table 8, only thiophene could be detected in any of the samples collected on Tenax cartridges. Subsequent experiments were performed in which hydrogen sulfide, sulfur dioxide, and methanethiol were passed through Tenax sampling cartridges from permeation tubes at approximately 0.3 ppm (a level typical of that which prevailed during Tenax sampling on 6 July). Analysis of these samples by GC/MS/COMP resulted in no detection of the parent compounds. Presumably the breakthrough volume for the three sulfur compounds is extremely low and thus precludes the detection of the sulfur compounds at low concentration levels (~0.3 ppm).

TABLE 8. M/Z IONS SELECTED FOR DETECTION OF PARENT SULFUR COMPOUNDS IN SMOG CHAMBERS

Compound	m/z ions			
	1st	2nd	3rd	4th
Hydrogen sulfide	34	-	-	-
Sulfur dioxide	64	48	-	-
Methanethiol	48	47	-	-
Dimethyl sulfide	47	62	-	-
Dimethyl disulfide	94	79	45	46
Thiophene	84	58	45	-

Thiophene was detected in the smog chamber atmosphere as shown in the single ion profile depicted in Figure 19. However, no principle products resulting from oxidation, addition, or decomposition reactions could be detected down to 1.0% of the original concentration of the sulfur compound. It is suspected that the reaction products are polar and are not amenable to gas chromatographic determination. Thus, the nature of the reaction products may have prevented their detection.

Glass fiber filters were located upstream of and were taken in conjunction with the Tenax cartridges. They were thermally desorbed and analyzed on a polar (Carbowax 20M) glass capillary column in a similar manner to the Tenax cartridges. Likewise, the principle ions for detection of the parent sulfur compounds as well as predicted reaction products were monitored by single ion profiling.

The analysis of glass fiber filters utilizing a polar glass capillary column, did not yield chromatographic peaks. Again, it is presumed that reaction products that were formed were highly polar and not amenable to gas chromatography.

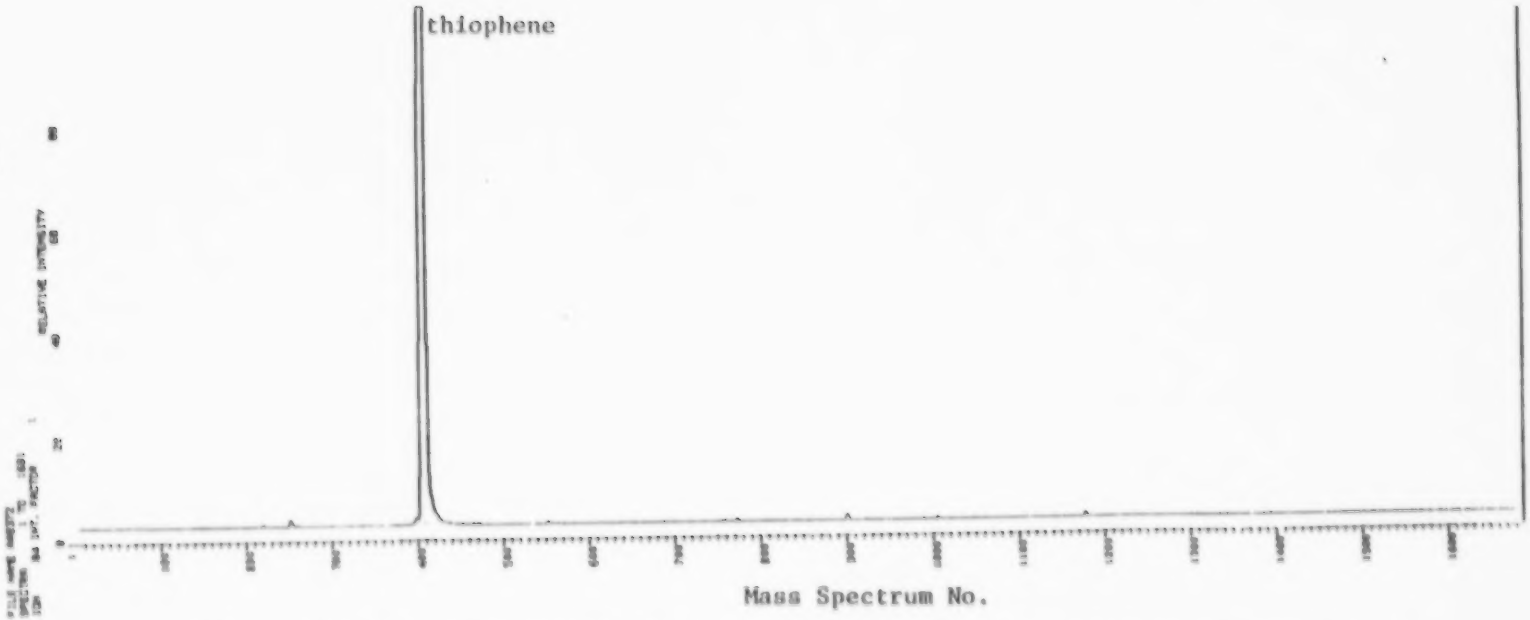


Figure 19. Single ion profile (m/z = 84) for thiophene collected on a Tenax GC sampling cartridge based on GC/MS/COMP analysis.

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APPENDIX
DETAILED DATA SHEETS FOR SMOG CHAMBER EXPERIMENTS

NOTES

1. Data sheets are listed in chronological order; see Table 3 in the text for a summary of the experimental program.

2. Blank spaces indicate that data are not available.

3. Measured zero values and negative outputs (resulting from instrumental zero drift) are designated as 0.0.

4. Values measured to be greater than zero, but less than 0.001 measurement units are indicated by 0.000.

CHAMBER NO. 1
8- 2-78

68 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 059 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	SR L/MIN
0.13										22.938		
1.13										22.855		
2.13										23.692		
3.13										24.200		
4.13										24.200		
5.13	0.002	0.002	0.008	0.010	8.261	0.971	0.861		1.400	24.200		
6.13	0.0	0.002	0.010	0.012	9.443	0.789	0.742	0.0	175.000	24.200		
7.13	0.008	0.0	0.011	0.011	9.557	0.725	0.648	12.867	70.000	24.200		
8.13	0.016	0.0	0.013	0.013	9.607	0.629	0.575	21.394	18.500	24.456		
9.13	0.030	0.000	0.012	0.012	9.661	0.535	0.523			24.627		
9.68									5.300			
10.13	0.049	0.0	0.010	0.010	9.772	0.483	0.458			25.057		
10.75									6.300			
11.13	0.068	0.001	0.009	0.011	10.672	0.431	0.409	50.228		25.664	24.289	0.976
11.67									5.700			
12.13	0.084	0.003	0.009	0.011	9.761	0.367	0.348			25.927	25.314	1.307
12.75									3.400			
13.13	0.097	0.005	0.008	0.013	9.480	0.315	0.295			26.102	25.394	0.764
14.13	0.096	0.003	0.008	0.011	9.306	0.266	0.246		1.400	26.278	23.108	0.308
15.13	0.090	0.002	0.008	0.010	9.195	0.231	0.213	28.215		26.278	23.236	0.395
16.13	0.088	0.002	0.007	0.008	9.149	0.211	0.194			26.366	23.181	0.257
17.13	0.083	0.002	0.007	0.009	9.459	0.200	0.187			26.366	23.462	0.214

CHAMBER NO. 2
8- 2-78

68 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 059 : SO2 DECAY

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	SR L/MIN
0.30										22.112		
1.30										21.948		
2.30										21.948		
3.30										21.948		
4.30										21.866		
5.30	0.001	0.003	0.001	0.003	8.645	0.948	0.864		1.500	21.866		
6.30	0.0	0.001	0.001	0.001	9.583	0.893	0.826	0.0	175.000	21.866		
6.92									105.000			
7.30	0.002	0.0	0.001	0.001	9.660	0.837	0.771	2.239		21.948		
7.83									49.000			
8.30	0.003	0.0	0.001	0.001	9.777	0.792	0.750	7.089		21.948		
9.30	0.010	0.0	0.002	0.002	9.657	0.756	0.761			21.948		
9.68									62.000			
10.30	0.023	0.0	0.002	0.002	9.877	0.715	0.697			22.030		
10.75									69.000			
11.30	0.041	0.000	0.003	0.004	9.801	0.669	0.654	29.352		22.112	24.289	0.976
11.67									63.000			
12.30	0.056	0.002	0.006	0.008	9.720	0.622	0.607			22.112	25.314	1.307
12.75									3.800			
13.30	0.069	0.004	0.005	0.009	9.688	0.572	0.559			22.112	25.394	0.764
14.30	0.070	0.002	0.006	0.008	9.545	0.528	0.510		1.400	22.276	23.108	0.308
15.30	0.069	0.002	0.006	0.008	9.504	0.500	0.476	29.352		22.358	23.236	0.395
16.30	0.070	0.001	0.006	0.007	9.535	0.481	0.457			22.358	23.181	0.257
17.30	0.067	0.002	0.006	0.007	9.924	0.465	0.441			22.358	23.462	0.214

CHAMBER NO. 3
8- 2-78

68 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 059 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	SR L/MIN
0.47										22.523		
1.47										22.523		
2.47										22.523		
3.47										22.689		
4.47										22.523		
5.00									8.600			
5.47	0.0	0.002	0.001	0.003	8.531	0.892	0.825			22.523		
6.00									185.000			
6.47	0.0	0.0	0.002	0.002	9.271	0.805	0.749	0.0		22.523		
6.92									101.000			
7.47	0.004	0.0	0.002	0.002	9.244	0.732	0.677	8.184		22.523		
7.83									33.000			
8.47	0.006	0.0	0.003	0.003	9.492	0.666	0.639	10.522		22.606		
9.47	0.018	0.0	0.004	0.004	9.395	0.575	0.637		26.000	22.523		
10.47	0.037	0.0	0.006	0.006	9.602	0.580	0.568		34.000	22.689		
11.47	0.056	0.001	0.006	0.008	9.609	0.530	0.521	51.005	29.000	22.772	24.289	0.976
12.47	0.073	0.003	0.007	0.009	9.681	0.482	0.472		2.300	22.772	25.314	1.307
13.47	0.085	0.004	0.007	0.011	9.471	0.433	0.424			22.855	25.394	0.764
14.47	0.084	0.002	0.007	0.009	9.308	0.387	0.380		0.950	22.938	23.108	0.308
15.47	0.084	0.001	0.007	0.008	9.241	0.364	0.351	45.305		22.938	23.236	0.395
16.47	0.083	0.001	0.006	0.007	9.127	0.346	0.333			23.021	23.181	0.257
17.47	0.079	0.001	0.007	0.008	9.991	0.333	0.321			23.021	23.462	0.214

CHAMBER NO. 4
8- 2-78

68 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 059 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	SR L/MIN
0.63										22.689		
1.63										22.523		
2.63										23.356		
3.63										23.356		
4.63										23.356		
5.00									22.000			
5.63	0.0	0.002	0.003	0.005	9.430	0.867	0.801			23.272		
6.00									200.000			
6.63	0.001	0.000	0.004	0.004	9.901	0.762	0.705	2.593	68.000	23.272		
7.63	0.007	0.0	0.004	0.004	9.908	0.680	0.625	8.212	19.000	23.356		
8.63	0.010	0.0	0.006	0.006	9.910	0.606	0.581	13.974		23.356		
9.63	0.026	0.0	0.005	0.005	10.090	0.554	0.557		12.500	23.356		
10.63	0.043	0.0	0.006	0.006	10.227	0.507	0.490		19.000	23.356		
11.63	0.061	0.003	0.006	0.009	10.179	0.450	0.444	41.778	17.500	23.356	24.289	0.976
12.63	0.078	0.003	0.007	0.010	10.013	0.399	0.388		2.100	23.440	25.314	1.307
13.63	0.086	0.003	0.007	0.010	9.853	0.351	0.347			23.524	25.394	0.764
14.17									0.950		23.108	0.308
14.63	0.085	0.002	0.006	0.008	9.661	0.306	0.297			23.524		
15.63	0.084	0.002	0.006	0.008	9.514	0.283	0.271	30.253		23.608	23.236	0.395
16.63	0.083	0.002	0.006	0.008	9.524	0.263	0.252			23.608	23.181	0.257
17.63	0.079	0.001	0.006	0.007	9.620	0.249	0.238			23.608	23.462	0.214

CHAMBER NO. 1
8-27-78

R2 & SUNSHINE

NIT SMOG CHAMBER STUDY
RUN 062 : NOX IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CO-SR LANG
0.12	0.001	0.0	0.0	0.0			18.936	0.0	0.0	0.0
1.13	0.000	0.003	0.0	0.003		22.028	18.697	0.0	0.0	0.0
2.12	0.0	0.001	0.000	0.001		21.455	18.211	0.0	0.0	0.0
3.13	0.0	0.001	0.001	0.002		20.049	17.697	0.0	0.0	0.0
4.13	0.0	0.037	0.010	0.048	1.275	18.772	16.881	0.0	0.0	0.0
5.13	0.0	0.044	0.010	0.054	1.265	18.773	16.456	0.0	0.001	0.008
6.13	0.000	0.044	0.009	0.053	1.403	18.721	16.408	0.004	0.048	0.434
7.13	0.001	0.045	0.007	0.052	1.396	19.528	17.650	0.011	0.168	4.250
8.13	0.001	0.045	0.008	0.053	1.430	22.498	20.747	0.025	0.510	16.998
9.08	0.002	0.043	0.011	0.054		22.940	23.172	0.036	0.725	47.100
10.07	0.003	0.043	0.009	0.053	1.260	22.968	24.425	0.041	0.777	90.383
11.13	0.004	0.042	0.011	0.052	1.401	22.944	25.381	0.052	1.003	141.563
12.10	0.003	0.036	0.012	0.048	1.323	22.875	25.994	0.047	0.867	199.122
13.05	0.005	0.035	0.011	0.047		22.889	26.933	0.048	0.966	248.838
14.02	0.005	0.031	0.017	0.048	1.226	22.903	27.069	0.041	0.915	304.995
14.98	0.006	0.030	0.016	0.047	1.223	22.917				357.584
15.95	0.005	0.028	0.016	0.045		22.931	26.969	0.032	0.654	395.957
16.00							27.036	0.022	0.453	397.919
17.13	0.004	0.026	0.018	0.044	1.285	22.855	26.531	0.011	0.235	426.932
18.10	0.002	0.022	0.020	0.042		22.855	25.019	0.003	0.041	439.045
19.05	0.000	0.020	0.021	0.042	1.238	22.772	23.472	0.0	0.0	441.659

CHAMBER NO. 2
8-27-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 062 : NOX IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CO-SR LANG
0.28	0.002	0.0	0.002	0.002			18.936	0.0	0.0	0.0
1.30	0.001	0.001	0.001	0.002		22.106	18.697	0.0	0.0	0.0
2.28	0.001	0.002	0.0	0.002		20.866	18.211	0.0	0.0	0.0
3.30	0.000	0.001	0.000	0.001		19.966	17.697	0.0	0.0	0.0
4.30	0.0	0.069	0.020	0.089	0.997	18.769	16.881	0.0	0.0	0.0
5.30	0.0	0.085	0.021	0.106	1.122	18.777	16.456	0.0	0.001	0.018
6.30	0.000	0.085	0.020	0.105	1.250	18.881	16.408	0.004	0.048	0.924
7.30	0.001	0.087	0.017	0.104	1.168	20.244	17.650	0.011	0.168	5.968
8.30	0.002	0.084	0.020	0.105	1.243	22.903	20.747	0.025	0.510	22.200
9.25	0.003	0.082	0.021	0.103		23.014	23.172	0.036	0.725	54.495
10.23	0.003	0.081	0.021	0.102	1.212	22.959	24.425	0.041	0.777	97.843
11.30	0.004	0.079	0.021	0.100	1.239	23.030	25.381	0.052	1.004	151.794
12.25	0.004	0.073	0.023	0.096	1.225	22.961	25.998	0.047	0.867	206.925
13.22	0.005	0.072	0.023	0.095		22.975	26.933	0.048	0.966	258.691
14.18	0.005	0.070	0.023	0.093	1.086	22.988	27.069	0.041	0.913	313.760
15.15	0.004	0.067	0.027	0.094	1.134	23.002	26.969	0.032	0.654	364.565
16.12	0.004	0.066	0.027	0.093		23.016	27.036	0.022	0.453	401.181
17.30	0.002	0.063	0.027	0.091	1.116	22.938	26.531	0.011	0.235	429.329
18.27	0.001	0.060	0.028	0.088		22.938	25.019	0.003	0.041	439.863
19.22	0.000	0.058	0.031	0.089	1.096	22.855	23.472	0.0	0.0	441.659

CHAMBER NO. 3
8-27-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 062 : NOX IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.43	0.001	0.0	0.001	0.001			18.936	0.0	0.0	0.0
1.47	0.0	0.001	0.001	0.002		21.694	18.697	0.0	0.0	0.0
2.43	0.000	0.002	0.000	0.002		20.701	18.211	0.0	0.0	0.0
3.47	0.0	0.135	0.0	0.135	0.778	19.568	17.697	0.0	0.0	0.0
4.47	0.0	0.159	0.036	0.195	0.817	18.455	16.881	0.0	0.0	0.0
5.47	0.0	0.156	0.036	0.193	0.793	18.472	16.456	0.0	0.001	0.028
6.47	0.001	0.155	0.039	0.194	0.912	18.730	16.408	0.004	0.048	1.414
7.47	0.001	0.155	0.037	0.192	0.765	20.407	17.650	0.011	0.168	7.678
8.45	0.002	0.153	0.036	0.189	0.825	22.314	20.747	0.025	0.510	26.790
9.40	0.003	0.152	0.036	0.188		22.259	23.172	0.036	0.725	61.020
10.40	0.002	0.150	0.037	0.187	0.925	22.205	24.425	0.041	0.777	105.768
11.45	0.002	0.148	0.034	0.182	0.929	22.122	25.381	0.052	1.003	160.821
12.42	0.003	0.143	0.038	0.181	0.823	22.136	25.994	0.047	0.867	215.768
13.37	0.003	0.141	0.038	0.179		22.150	26.933	0.048	0.966	267.385
14.33	0.003	0.138	0.040	0.178	0.740	22.246	27.069	0.041	0.913	321.977
15.30	0.003	0.135	0.039	0.175	0.750	22.259	26.969	0.032	0.654	370.451
16.27	0.002	0.133	0.041	0.175		22.273	27.036	0.022	0.453	405.258
17.45	0.001	0.129	0.043	0.172	0.788	22.194	26.531	0.011	0.235	431.444
18.42	0.001	0.125	0.040	0.165		22.194	25.019	0.003	0.041	440.232
19.37	0.0	0.123	0.045	0.169	0.748	22.194	23.472	0.0	0.0	441.659

CHAMBER NO. 4
8-27-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 062 : NOX IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.60	0.001	0.0	0.002	0.002			18.936	0.0	0.0	0.0
1.63	0.0	0.001	0.001	0.002		21.690	18.697	0.0	0.0	0.0
2.60	0.0	0.001	0.000	0.002		20.458	18.211	0.0	0.0	0.0
3.63	0.0	0.279	0.062	0.341	1.745	19.486	17.697	0.0	0.0	0.0
4.63	0.0	0.316	0.076	0.392	1.745	18.684	16.881	0.0	0.0	0.0
5.63	0.0	0.312	0.078	0.390	1.799	18.476	16.456	0.0	0.001	0.038
6.63	0.000	0.309	0.079	0.389	1.788	18.889	16.408	0.004	0.048	1.874
7.63	0.001	0.304	0.079	0.383	1.890	21.215	17.650	0.011	0.168	9.290
8.62	0.001	0.302	0.075	0.378	1.763	22.968	20.747	0.025	0.510	31.992
9.57	0.001	0.302	0.075	0.377		22.913	23.172	0.036	0.725	68.415
10.57	0.001	0.299	0.072	0.372	1.808	22.857	24.425	0.041	0.777	113.693
11.63	0.002	0.300	0.066	0.366	1.814	22.868	25.381	0.052	1.003	171.653
12.57	0.001	0.298	0.067	0.365		22.882	25.994	0.047	0.867	223.571
13.53	0.001	0.296	0.069	0.365		22.896	26.933	0.048	0.966	276.658
14.50	0.001	0.293	0.070	0.363	1.643	22.910	27.069	0.041	0.913	331.290
15.47	0.001	0.294	0.068	0.362	1.577	22.924	26.969	0.032	0.654	377.122
16.43	0.001	0.289	0.065	0.354		22.938	27.036	0.022	0.453	409.606
17.62	0.001	0.281	0.069	0.350	1.660	22.855	26.531	0.011	0.235	433.841
18.58	0.000	0.276	0.071	0.347		22.855	25.019	0.003	0.041	440.626
19.53	0.0	0.270	0.072	0.342	1.646	22.772	23.472	0.0	0.0	441.659

CHAMBER NO. 1
8-29-78

78 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 063 : EKMA IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	0.0	0.004	0.001	0.004				17.992	22.233	0.0	0.0	0.0
1.13	0.0	0.001	0.000	0.001				17.810	21.647	0.0	0.0	0.0
2.13	0.0	0.002	0.000	0.002				17.677	20.992	0.0	0.0	0.0
3.13	0.0	0.000	0.000	0.000				17.665	20.286	0.0	0.0	0.0
4.13	0.0	0.000	0.0	0.000	1.248			17.728	19.969	0.0	0.0	0.0
5.13	0.0	0.001	0.001	0.002	9.335	0.056		17.639	19.967	0.0	0.001	0.008
6.13	0.000	0.005	0.000	0.005	9.562	0.063		17.550	20.158	0.004	0.060	0.528
7.13	0.001	0.004	0.002	0.006	9.664			17.767	21.303	0.013	0.285	5.883
8.13	0.007	0.002	0.002	0.004	9.958	0.049		17.819	23.236	0.026	0.553	25.073
9.13	0.019	0.0	0.003	0.003	9.500	0.035		17.780	25.631	0.039	0.821	60.344
10.13	0.038	0.0	0.003	0.003	9.795	0.035		17.058	27.419	0.049	1.025	111.195
11.13	0.062	0.002	0.003	0.005	9.189	0.037		16.945	28.469	0.057	1.183	173.927
12.13	0.085	0.000	0.006	0.006				16.907	29.300	0.058	1.215	245.157
13.13	0.106	0.001	0.005	0.006	12.074	0.039		16.869	30.014	0.054	1.143	317.495
14.13	0.124	0.005	0.007	0.011	11.780	0.033		17.075	30.425	0.040	0.863	383.891
15.13	0.130	0.004	0.006	0.010				17.151	29.786	0.019	0.344	431.622
16.13	0.130	0.007	0.006	0.013	11.331	0.033		17.227	29.469	0.016	0.279	451.755
17.13	0.130	0.011	0.006	0.017	11.538	0.032		17.227	27.147	0.006	0.061	466.795
18.13	0.124	0.012	0.006	0.018	11.109	0.030		17.227	22.294	0.0	0.005	470.018
19.13	0.117	0.007	0.007	0.013	10.981	0.031			19.303	0.0	0.0	470.279
20.13							0.000					470.279

CHAMBER NO. 2
8-29-78

78 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 065 : EKMA IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	0.0	0.003	0.001	0.004				18.077	22.233	0.0	0.0	0.0
1.30	0.0	0.001	0.0	0.001				17.895	21.647	0.0	0.0	0.0
2.30	0.0	0.001	0.002	0.003				17.828	20.992	0.0	0.0	0.0
3.30	0.0	0.0	0.001	0.001				17.815	20.286	0.0	0.0	0.0
4.30	0.0	0.001	0.0	0.001	3.260			17.603	19.969	0.0	0.0	0.0
5.30	0.0	0.002	0.000	0.002	10.073	0.130		17.637	19.967	0.0	0.001	0.018
6.30	0.000	0.004	0.001	0.005	9.558	0.134		17.624	20.158	0.004	0.060	1.140
7.30	0.001	0.004	0.001	0.005	9.768	0.123		17.841	21.303	0.013	0.285	8.790
8.30	0.009	0.002	0.002	0.004	9.982	0.119		17.965	23.236	0.026	0.553	30.714
9.30	0.023	0.001	0.002	0.003	9.761	0.128		17.927	25.631	0.039	0.821	68.718
10.30	0.045	0.0	0.003	0.003	9.772	0.118		17.052	27.419	0.049	1.025	121.650
11.30	0.070	0.001	0.005	0.006	9.496	0.075		16.938	28.469	0.057	1.183	185.994
12.30	0.095	0.002	0.004	0.006				16.901	29.300	0.058	1.215	257.550
13.30	0.120	0.001	0.006	0.007	12.335	0.096		17.089	30.014	0.054	1.143	329.153
14.30	0.139	0.005	0.007	0.012	12.168	0.093		17.227	30.425	0.040	0.863	392.693
15.30	0.144	0.005	0.006	0.011				17.227	29.786	0.019	0.344	435.131
16.30	0.145	0.006	0.007	0.012	11.872			17.227	29.469	0.016	0.279	454.601
17.30	0.144	0.010	0.007	0.018	12.229	0.083		17.303	27.147	0.006	0.061	467.417
18.30	0.136	0.011	0.006	0.017	11.455	0.083		17.227	22.294	0.0	0.005	470.069
19.30	0.130	0.006	0.006	0.012			0.000		19.303	0.0	0.0	470.279

CHAMBER NO. 3
8-29-78

78 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 063 : EKMA IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	0.0	0.002	0.001	0.003				18.162	22.233	0.0	0.0	0.0
1.47	0.0	0.001	0.000	0.002				18.057	21.647	0.0	0.0	0.0
2.47	0.0	0.002	0.000	0.002				17.979	20.992	0.0	0.0	0.0
3.47	0.0	0.001	0.0	0.001				17.813	20.286	0.0	0.0	0.0
4.47	0.0	0.002	0.001	0.002	9.197	0.158		17.648	19.969	0.0	0.0	0.0
5.47	0.0	0.001	0.0	0.001	9.049	0.266		17.635	19.967	0.0	0.001	0.028
6.47	0.000	0.004	0.001	0.005	9.100	0.273		17.622	20.158	0.004	0.060	1.752
7.47	0.003	0.004	0.002	0.006	8.877	0.254		17.915	21.303	0.013	0.285	11.697
8.47	0.014	0.001	0.002	0.003				17.959	23.236	0.026	0.553	36.355
9.47	0.034	0.000	0.002	0.002	8.697	0.268		17.920	25.631	0.039	0.821	77.092
10.47	0.063	0.0	0.005	0.005	8.827	0.240		17.121	27.419	0.049	1.025	132.105
11.47	0.092	0.001	0.006	0.007				17.007	28.469	0.057	1.183	198.060
12.47	0.123	0.002	0.007	0.009				16.894	29.300	0.058	1.215	269.943
13.47	0.152	0.001	0.007	0.009	11.492	0.232		17.159	30.014	0.054	1.143	340.812
14.47	0.175	0.005	0.009	0.014	11.491	0.213		17.227	30.425	0.040	0.863	401.496
15.47	0.180	0.005	0.012	0.017				17.227	29.786	0.019	0.344	438.640
16.47	0.179	0.007	0.010	0.017	10.973	0.200		17.303	29.469	0.016	0.279	457.447
17.47	0.176	0.011	0.010	0.021	11.196	0.200		17.227	27.147	0.006	0.061	468.039
18.47	0.167	0.010	0.009	0.019	11.155	0.191		17.303	22.294	0.0	0.005	470.120
19.47	0.159	0.004	0.008	0.013			0.000		19.303	0.0	0.0	470.279

CHAMBER NO. 4
8-29-78

78 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 063 : EKMA IRRADIATION

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	0.0	0.003	0.001	0.003				18.401	22.233	0.0	0.0	0.0
1.63	0.0	0.001	0.001	0.002				18.449	21.647	0.0	0.0	0.0
2.63	0.0	0.001	0.0	0.001				18.265	20.992	0.0	0.0	0.0
3.63	0.0	0.000	0.001	0.001				17.888	20.286	0.0	0.0	0.0
4.63	0.0	0.002	0.001	0.003	8.104	0.305		17.646	19.969	0.0	0.0	0.0
5.63	0.0	0.002	0.001	0.003	9.562	0.484		17.633	19.967	0.0	0.001	0.038
6.63	0.000	0.004	0.003	0.007	9.757	0.491		17.620	20.158	0.004	0.060	2.328
7.63	0.007	0.002	0.004	0.006	9.739	0.455		18.374	21.303	0.013	0.285	14.433
8.63	0.026	0.000	0.005	0.006	9.889	0.442		18.337	23.236	0.026	0.553	41.663
9.63	0.053	0.000	0.001	0.001	9.436	0.438		18.298	25.631	0.039	0.821	84.974
10.63	0.080	0.001	0.007	0.008	9.490	0.431		17.494	27.419	0.049	1.025	141.945
11.63	0.110	0.002	0.008	0.010				17.304	28.469	0.057	1.183	209.417
12.63	0.137	0.001	0.009	0.009				17.266	29.300	0.058	1.215	281.607
13.63	0.165	0.001	0.011	0.012	12.040	0.419		17.456	30.014	0.054	1.143	351.785
14.63	0.185	0.005	0.011	0.015	11.997	0.399		17.531	30.425	0.040	0.863	409.781
15.63	0.186	0.006	0.010	0.016				17.607	29.786	0.019	0.344	441.942
16.63	0.184	0.007	0.011	0.018	11.633	0.375	0.001	17.607	29.469	0.016	0.279	460.125
17.63	0.177	0.011	0.011	0.022	11.401	0.359		17.531	27.147	0.006	0.061	468.625
18.63	0.167	0.010	0.011	0.021	11.748	0.364		17.531	22.294	0.0	0.005	470.168
19.63	0.160	0.003	0.010	0.013			0.000		19.303	0.0	0.0	470.279

CHAMBER NO. 1
9- 6-78

91 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 064 : EKMA/NOX(0.05)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C2H6 PPM	PAN PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN
0.13		0.018	0.000	0.018	1.351					16.924	15.772	0.0	0.0
1.13		0.012	0.000	0.012	1.298					16.548	15.353	0.0	0.0
2.13		0.006	0.0	0.006	1.183					16.548	15.011	0.0	0.0
3.13		0.002	0.0	0.002	1.168					15.875	14.686	0.0	0.0
4.13		0.002	0.0	0.002	10.811	0.050	0.011			15.504	14.644	0.0	0.0
5.13		0.039	0.009	0.048	10.479	0.046	0.011			15.356	14.594	0.0	0.0
6.13		0.038	0.009	0.047	10.732	0.045	0.011		0.0	15.061	14.561	0.003	0.049
7.13		0.036	0.009	0.045	10.511	0.044	0.011			17.000	16.861	0.013	0.276
8.13	0.002	0.032	0.013	0.045	10.602	0.045	0.010		0.0	20.893	20.069	0.025	0.539
9.13	0.006	0.026	0.018	0.044	10.491	0.045	0.008		0.0	22.523	22.967	0.038	0.809
10.13	0.017	0.017	0.024	0.041	10.824	0.041	0.007			22.523	24.244	0.047	0.944
11.13	0.030	0.011	0.028	0.039	10.628	0.048	0.004		0.0	22.606	24.867	0.052	1.049
12.13	0.047	0.009	0.026	0.035	10.498	0.041				22.689	25.758	0.057	1.181
13.13	0.072	0.005	0.024	0.029	10.120	0.034		0.001		22.689	25.819	0.041	0.783
14.13	0.084	0.005	0.024	0.029	10.295	0.034		0.001		22.523	25.244	0.034	0.639
15.13	0.094	0.004	0.021	0.025	9.746	0.035			0.0	22.523	25.617	0.030	0.601
16.13	0.105	0.002	0.019	0.021	9.703	0.030		0.001		22.523	25.586	0.019	0.393
17.13	0.107	0.001	0.019	0.020	9.762	0.030		0.001			23.814	0.008	0.098

TIME (EST)	CU-SR LANG
0.13	0.0
1.13	0.0
2.13	0.0
3.13	0.0
4.13	0.0
5.13	0.0
6.13	0.382
7.13	5.093
8.13	23.704
9.13	58.150
10.13	107.743
11.13	165.202
12.13	229.172
13.13	296.927
14.13	342.784
15.13	380.827
16.13	415.264
17.13	436.543

CHAMBER NO. 2
9- 6-78

91 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 064 : EKMA/NOX(0.05)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-HUT PPM	C3H6 PPM	PAN PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN
0.30		0.017	0.000	0.017	1.339					16.849	15.772	0.0	0.0
1.30		0.011	0.0	0.011	1.274					16.548	15.353	0.0	0.0
2.30		0.004	0.000	0.005	1.244					16.473	15.011	0.0	0.0
3.30		0.001	0.0	0.001	1.223					15.801	14.686	0.0	0.0
4.30		0.040	0.0	0.040	10.802	0.093	0.022			15.504	14.644	0.0	0.0
5.30		0.041	0.010	0.051	10.818	0.091	0.022			14.988	14.594	0.0	0.0
6.30		0.042	0.010	0.052	10.712	0.087	0.020		0.0	15.356	14.561	0.003	0.049
7.30		0.039	0.009	0.048	10.263	0.088	0.020			18.220	16.861	0.013	0.276
8.30	0.003	0.032	0.018	0.049	10.266	0.086	0.018		0.0	21.377	20.069	0.025	0.539
9.30	0.012	0.021	0.026	0.047	10.817	0.090	0.015		0.0	22.112	22.967	0.038	0.809
10.30	0.033	0.012	0.033	0.045	10.718	0.082	0.011			22.112	24.244	0.047	0.944
11.30	0.062	0.008	0.034	0.041	10.655	0.082	0.008	0.001	0.0	22.112	24.867	0.052	1.049
12.30	0.102	0.004	0.032	0.036	10.472	0.082	0.006	0.002		22.194	25.758	0.057	1.181
13.30	0.147	0.002	0.028	0.030	10.146	0.070	0.002	0.003		22.112	25.819	0.041	0.783
14.30	0.165	0.003	0.024	0.027	10.414	0.068		0.004		22.030	25.244	0.034	0.639
15.30	0.185	0.001	0.022	0.023	9.850	0.061		0.005	0.0	22.030	25.617	0.030	0.601
16.30	0.192	0.002	0.021	0.023	10.035	0.065		0.005		22.030	25.586	0.019	0.393
17.25	0.192	0.000	0.019	0.020							23.814	0.008	0.098

TIME (EST)	CU-SR LANG
0.30	0.0
1.30	0.0
2.30	0.0
3.30	0.0
4.30	0.0
5.30	0.0
6.30	0.882
7.30	7.908
8.30	29.202
9.30	66.402
10.30	117.372
11.30	175.902
12.30	241.218
13.30	304.914
14.30	349.302
15.30	386.958
16.30	419.273
17.25	437.249

CHAMBER NO. 3
9- 6-78

91 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 064 : EKMA/NOX(0.05)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN
0.47		0.016	0.000	0.016	0.735					16.548	15.772	0.0	0.0
1.47		0.010	0.0	0.010	0.624					16.248	15.353	0.0	0.0
2.47		0.004	0.0	0.004						16.174	15.011	0.0	0.0
3.47		0.002	0.0	0.002	0.572					15.504	14.686	0.0	0.0
4.47		0.002	0.001	0.003	10.113	0.195	0.047			15.504	14.644	0.0	0.0
5.47		0.038	0.012	0.051						14.988	14.594	0.0	0.0
6.47		0.043	0.012	0.055	9.933	0.205	0.046		0.200	15.430	14.561	0.003	0.049
7.47		0.037	0.017	0.054	9.917	0.188	0.044			18.683	16.861	0.013	0.276
8.47	0.008	0.024	0.028	0.052	9.723	0.190	0.040		0.0	21.703	20.069	0.025	0.539
9.47	0.038	0.011	0.038	0.049	9.984	0.185	0.032		0.0	22.194	22.967	0.038	0.809
10.47	0.101	0.005	0.039	0.043	9.922	0.180	0.021	0.003		22.194	24.244	0.047	0.944
11.47	0.176	0.002	0.037	0.039	9.831	0.167	0.011	0.008	0.0	22.194	24.867	0.052	1.049
12.47	0.249	0.002	0.033	0.035	9.655	0.156	0.006			22.276	25.758	0.057	1.181
13.47	0.293	0.002	0.031	0.034	10.021	0.153		0.013		22.194	25.819	0.041	0.783
14.47	0.302	0.003	0.030	0.033	9.622	0.146		0.013		22.112	25.244	0.034	0.639
15.47	0.310	0.002	0.028	0.030	9.570	0.140		0.013	0.0	22.112	25.617	0.030	0.601
16.47	0.313	0.002	0.027	0.029	9.496	0.140		0.012		22.112	25.586	0.019	0.393
17.00											23.814	0.008	0.098

TIME (EST)	CU-SR LANG
0.47	0.0
1.47	0.0
2.47	0.0
3.47	0.0
4.47	0.0
5.47	0.0
6.47	1.382
7.47	10.723
8.47	34.700
9.47	74.654
10.47	127.001
11.47	186.602
12.47	253.264
13.47	312.900
14.47	355.819
15.47	393.088
16.47	423.281
17.00	435.779

CHAMBER NO. 4
9- 6-78

91 % SUNSHINE

RTI SNUG CHAMBER STUDY
RUN 064 : EKMA/NOX(0.05)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN
0.63		0.015	0.001	0.016	1.238				0.0	16.774	15.772	0.0	0.0
1.63		0.008	0.000	0.009	1.109					16.548	15.353	0.0	0.0
2.63		0.003	0.0	0.003						16.174	15.011	0.0	0.0
3.63		0.003	0.0	0.003	1.121	0.363	0.084			15.652	14.686	0.0	0.0
4.63		0.045	0.009	0.054	10.728	0.370	0.086			15.652	14.644	0.0	0.0
5.63		0.042	0.010	0.052	10.737	0.365	0.086			15.283	14.594	0.0	0.0
6.63		0.043	0.011	0.054	10.683	0.360	0.083			15.578	14.561	0.003	0.049
7.63		0.030	0.019	0.049	10.582	0.353	0.079			19.542	16.861	0.013	0.276
8.63	0.026	0.014	0.037	0.051	10.416	0.347	0.070		0.0	22.523	20.069	0.025	0.539
9.63	0.109	0.003	0.042	0.045	10.544	0.341	0.050	0.004	0.210	23.021	22.967	0.038	0.809
10.63	0.217	0.001	0.038	0.039	10.721	0.334	0.030			23.021	24.244	0.047	0.944
11.63	0.283	0.001	0.036	0.038	10.502	0.321	0.017	0.017	0.0	23.105	24.867	0.052	1.049
12.63	0.327	0.003	0.034	0.037	10.521	0.308	0.008	0.018		23.105	25.758	0.057	1.181
13.63	0.355	0.003	0.033	0.037	10.603	0.313	0.005	0.017		23.021	25.819	0.041	0.783
14.63	0.353	0.002	0.033	0.035	10.063	0.285		0.017		22.938	25.244	0.034	0.639
15.63	0.362	0.002	0.031	0.032	10.043	0.282		0.015	0.0	22.938	25.617	0.030	0.601
16.63	0.361	0.001	0.031	0.032	10.118	0.281		0.014		22.938	25.586	0.019	0.393
17.00											23.814	0.008	0.098

TIME (EST)	CU-SR LANG
0.63	0.0
1.63	0.0
2.63	0.0
3.63	0.0
4.63	0.0
5.63	0.0
6.63	1.852
7.63	13.373
8.63	39.874
9.63	82.420
10.63	136.063
11.63	196.672
12.63	264.602
13.63	320.417
14.63	361.954
15.63	398.857
16.63	427.054
17.00	435.779

CHAMBER NO. 1
9- 7-78

96 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 065 : EKMA/NOX(0.10)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13		0.0	0.001	0.001	1.551				15.875	14.614	0.0	0.0	0.0
1.13		0.000	0.001	0.001	1.496				15.209	14.158	0.0	0.0	0.0
2.13		0.000	0.001	0.001					14.914	14.025	0.0	0.0	0.0
3.13		0.0	0.0	0.0	1.419				15.578	13.694	0.0	0.0	0.0
4.13		0.003	0.0	0.003	10.394				14.110	13.128	0.0	0.0	0.0
5.13		0.073	0.016	0.090	10.427	0.063			13.674	12.669	0.0	0.0	0.0
6.13					10.470	0.070		0.0	13.601	12.922	0.003	0.056	0.437
7.13		0.078	0.020	0.098	10.190	0.063			15.801	15.655	0.012	0.276	5.513
8.13	0.001	0.074	0.022	0.096	10.316	0.061			19.463	18.658	0.025	0.556	24.257
9.13	0.004	0.067	0.028	0.095	10.187	0.058			20.974	22.183	0.039	0.821	59.684
10.13	0.009	0.059	0.036	0.095	10.125	0.062		0.0	21.054	24.464	0.050	1.040	110.652
11.13	0.013	0.047	0.044	0.090	10.171	0.049			21.135	26.386	0.057	1.168	174.050
12.13	0.020	0.038	0.048	0.085	10.033	0.046			21.135	27.272	0.058	1.206	244.427
13.13	0.027	0.027	0.053	0.080	10.061	0.047			21.135	27.681	0.055	1.158	316.412
14.13	0.036	0.019	0.056	0.076	9.893	0.044			21.135	28.339	0.045	1.000	384.659
15.13	0.043	0.014	0.056	0.069	9.803	0.037			21.135	28.500	0.034	0.772	442.881
16.13	0.045	0.010	0.058	0.068	9.718	0.037			21.135	28.356	0.022	0.525	487.274
17.13	0.045	0.007	0.059	0.065	9.716	0.036	0.000		21.216	27.600	0.010	0.226	516.442
18.13							0.000						530.001

CHAMBER NO. 2
9- 7-78

96 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 065 : EKMA/NOX(0.10)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	CN-S K=CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30		0.001	0.000	0.002	1.953				16.174	14.614	0.0	0.0	0.0
1.30		0.001	0.0	0.001	1.813				15.135	14.158	0.0	0.0	0.0
2.30		0.0	0.0	0.0					15.061	14.025	0.0	0.0	0.0
3.30		0.0	0.0	0.0	1.721				15.356	13.694	0.0	0.0	0.0
4.30		0.002	0.0	0.002	11.501	0.153			14.110	13.128	0.0	0.0	0.0
5.30		0.078	0.019	0.098	11.406	0.157			13.746	12.669	0.0	0.0	0.0
6.30		0.079	0.017	0.096	11.276	0.148		0.0	13.819	12.922	0.003	0.056	1.008
7.30		0.074	0.018	0.093	11.270	0.155			17.000	15.653	0.012	0.276	8.328
8.30	0.002	0.065	0.026	0.091	11.255	0.141			19.857	18.658	0.025	0.556	29.928
9.30	0.009	0.051	0.039	0.090	11.157	0.139			20.015	22.183	0.039	0.821	68.058
10.30	0.021	0.036	0.052	0.088	11.141	0.129		0.0	20.015	24.464	0.050	1.040	121.260
11.30	0.041	0.022	0.061	0.083	11.170	0.120			20.095	26.386	0.057	1.168	185.964
12.30	0.070	0.015	0.063	0.078	11.021	0.112			20.095	27.272	0.058	1.206	256.728
13.30	0.109	0.008	0.062	0.069	11.044	0.102	0.001		20.095	27.681	0.055	1.158	328.223
14.30	0.144	0.003	0.056	0.060	11.086	0.097			20.095	28.339	0.045	1.000	394.859
15.30	0.174	0.001	0.051	0.052	10.928	0.089			20.095	28.500	0.034	0.772	450.755
16.30	0.189	0.0	0.042	0.042	10.821	0.088			20.095	28.356	0.022	0.525	492.629
17.30	0.192	0.002	0.043	0.044	10.738	0.098	0.002		20.095	27.600	0.010	0.226	518.747

CHAMBER NO. 5
9- 7-78

% SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 065 : EKMA/NOX(0.10)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	C2H5 R=C2H5/CH3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47		0.000	0.003	0.003	1.041				15.578	14.614	0.0	0.0	0.0
1.47		0.001	0.001	0.003	0.918				14.910	14.158	0.0	0.0	0.0
2.47		0.0	0.002	0.002					14.767	14.025	0.0	0.0	0.0
3.47		0.000	0.0	0.000	0.771				14.767	13.694	0.0	0.0	0.0
4.47		0.077	0.0	0.077	10.475	0.277			13.891	13.128	0.0	0.0	0.0
5.47		0.080	0.017	0.097	10.620	0.281			13.312	12.669	0.0	0.0	0.0
6.47		0.079	0.017	0.096	10.326	0.276		0.0	13.746	12.922	0.003	0.056	1.579
7.47		0.071	0.022	0.093	10.480	0.277			17.531	15.653	0.012	0.276	11.143
8.47	0.004	0.052	0.037	0.089	10.291	0.269			20.893	18.658	0.025	0.556	35.599
9.47	0.025	0.030	0.058	0.088	10.472	0.252			21.297	22.183	0.039	0.821	76.432
10.47	0.076	0.014	0.072	0.085	10.361	0.228	0.001	0.0	21.297	24.464	0.050	1.040	131.868
11.47	0.164	0.005	0.067	0.072	10.314	0.204	0.004		21.297	26.386	0.057	1.168	197.877
12.47	0.266	0.003	0.058	0.061	10.419	0.184	0.008		21.297	27.272	0.058	1.206	269.029
13.47	0.365	0.002	0.048	0.050	10.374	0.168	0.012		21.297	27.681	0.055	1.158	340.035
14.47	0.431	0.000	0.042	0.043	10.396	0.167	0.012		21.297	28.339	0.045	1.000	405.060
15.47	0.464	0.0	0.039	0.039	10.438	0.146			21.297	28.500	0.034	0.772	458.630
16.47	0.474	0.000	0.034	0.034	10.175	0.135	0.009		21.297	28.356	0.022	0.525	497.984
17.47	0.467	0.002	0.030	0.032	10.045	0.136	0.009		21.377	27.600	0.010	0.226	521.052

CHAMBER NO. 4
9- 7-78

96 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 065 : EKMA/NOX(0.10)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63		0.001	0.002	0.003	1.556				15.504	14.614	0.0	0.0	0.0
1.63		0.001	0.002	0.002	1.547				14.988	14.158	0.0	0.0	0.0
2.63		0.0	0.001	0.001					15.430	14.025	0.0	0.0	0.0
3.63		0.001	0.0	0.001	1.431	0.286			14.621	13.694	0.0	0.0	0.0
4.63		0.088	0.017	0.105	11.216	0.546			13.746	13.128	0.0	0.0	0.0
5.63		0.088	0.017	0.105	11.194	0.541			13.456	12.669	0.0	0.0	0.0
6.63		0.081	0.021	0.101	11.008	0.538		0.0	13.964	12.922	0.003	0.056	2.117
7.63		0.073	0.028	0.101	10.996	0.531			18.297	15.653	0.012	0.276	13.793
8.63	0.010	0.042	0.054	0.096	10.928	0.516			20.893	18.658	0.025	0.556	40.937
9.63	0.065	0.015	0.083	0.098	11.089	0.491			20.893	22.183	0.039	0.821	84.314
10.63	0.201	0.003	0.080	0.083	11.056	0.429	0.006	0.0	20.893	24.464	0.050	1.040	141.852
11.63	0.373	0.002	0.068	0.069	10.997	0.591	0.018		20.893	26.386	0.057	1.168	209.090
12.63	0.486	0.003	0.059	0.062	11.011	0.345			20.893	27.272	0.058	1.206	280.606
13.63	0.560	0.001	0.055	0.056	10.986	0.321	0.024		20.893	27.681	0.055	1.158	351.152
14.63	0.600	0.000	0.051	0.051	10.962	0.311			20.893	28.339	0.045	1.000	414.659
15.63	0.617	0.0	0.046	0.046	10.876	0.298			20.893	28.500	0.034	0.772	466.041
16.63	0.615	0.000	0.040	0.041	10.630	0.288	0.014		20.893	28.356	0.022	0.525	503.024
16.97							0.014						513.734
17.63	0.599	0.000	0.034	0.034	10.603	0.283	0.014		20.974	27.600	0.010	0.226	523.222

RTI SMOG CHAMBER STUDY
RUN 066 : EKMA/NOX(0.20)

CHAMBER NO. 1
9- 8-78

82 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	0.002	0.001	0.002	0.003	1.590			18.528	16.975	0.0	0.0	0.0
1.13	0.000	0.002	0.000	0.002	1.486			18.297	16.625	0.0	0.0	0.0
2.13	0.0	0.001	0.001	0.002				17.989	16.375	0.0	0.0	0.0
3.13	0.0	0.001	0.001	0.002	1.343			17.913	16.056	0.0	0.0	0.0
4.13	0.0	0.003	0.001	0.004	7.675	0.071		16.623	15.586	0.0	0.0	0.0
5.13	0.0	0.148	0.033	0.181	7.944	0.066		16.473	15.506	0.0	0.0	0.0
6.13	0.0	0.161	0.032	0.193	7.683	0.068		17.760	15.828	0.003	0.048	0.374
7.13	0.001	0.160	0.033	0.194	7.767	0.069		18.297	18.428	0.011	0.260	4.908
8.13	0.002	0.157	0.038	0.195				21.540	22.289	0.023	0.516	22.505
9.13	0.002	0.147	0.039	0.186	7.744	0.064		22.606	24.247	0.033	0.683	54.767
10.13	0.004	0.137	0.049	0.187	7.585	0.058		22.689	25.986	0.046	1.011	98.306
11.13	0.005	0.122	0.056	0.177	7.745	0.057		22.689	27.103	0.048	0.990	158.802
12.13	0.007	0.111	0.062	0.173	7.619	0.057	0.0	22.689	27.483	0.050	1.090	218.982
13.13	0.008	0.100	0.062	0.162	7.613	0.048		22.772	28.206	0.048	1.050	284.070
14.13	0.009	0.090	0.073	0.163	7.859	0.053		22.606	29.008	0.041	0.930	346.134
15.13	0.009	0.079	0.078	0.157	7.786	0.036		22.689	28.558	0.030	0.703	400.163
16.13	0.008	0.070	0.083	0.153	7.901	0.046		22.689	28.322	0.019	0.443	440.314
17.13	0.004	0.068	0.082	0.151	7.700	0.043		22.689	27.339	0.008	0.182	464.859

CHAMBER NO. 2
9- 8-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 066 : EKMA/NOX(0.20)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	0.001	0.001	0.001	0.002	2.291			18.528	16.975	0.0	0.0	0.0
1.30	0.000	0.001	0.000	0.002	2.165			18.143	16.625	0.0	0.0	0.0
2.30	0.0	0.001	0.000	0.002				18.066	16.375	0.0	0.0	0.0
3.30	0.0	0.001	0.0	0.001	1.992			17.760	16.056	0.0	0.0	0.0
4.30	0.0	0.152	0.0	0.152	9.523	0.133		16.548	15.586	0.0	0.0	0.0
5.30	0.0	0.151	0.037	0.188	9.440	0.134		17.227	15.506	0.0	0.0	0.0
6.30	0.0	0.157	0.039	0.196	9.236	0.130		17.760	15.828	0.003	0.048	0.868
7.30	0.001	0.154	0.039	0.193	9.399	0.136		19.542	18.428	0.011	0.260	7.560
8.30	0.002	0.145	0.044	0.189				21.866	22.289	0.023	0.516	27.768
9.30	0.003	0.135	0.052	0.188	9.503	0.122		22.276	24.247	0.033	0.683	61.734
10.30	0.006	0.119	0.065	0.184	9.166	0.113		22.194	25.986	0.046	1.011	108.618
11.30	0.009	0.101	0.078	0.179	9.338	0.109		22.194	27.103	0.048	0.990	168.900
12.30	0.013	0.085	0.086	0.171	9.266	0.105	0.0	22.276	27.483	0.050	1.090	230.100
13.30	0.018	0.073	0.092	0.165				22.194	28.206	0.048	1.050	294.780
14.30	0.021	0.060	0.102	0.162	9.506	0.097		22.194	29.008	0.041	0.930	355.619
15.30	0.022	0.048	0.106	0.154	9.483	0.102		22.112	28.558	0.030	0.703	407.333
16.30	0.019	0.039	0.111	0.150	9.625	0.093		22.112	28.322	0.019	0.443	444.843
17.30	0.012	0.033	0.114	0.148	9.343	0.087		22.112	27.339	0.008	0.182	466.715

CHAMBER NO. 3
9- 8-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 066 : EKMA/NOX(0.20)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	0.002	0.002	0.001	0.003	0.976				18.143	16.975	0.0	0.0	0.0
1.47	0.001	0.001	0.001	0.002	0.813				17.913	16.625	0.0	0.0	0.0
2.47	0.0	0.001	0.000	0.002	0.742				17.760	16.375	0.0	0.0	0.0
3.47	0.0	0.002	0.002	0.004	8.246				17.227	16.056	0.0	0.0	0.0
4.47	0.0	0.149	0.011	0.160	9.719	0.255			16.248	15.586	0.0	0.0	0.0
5.47	0.0	0.147	0.034	0.181	9.633	0.256			17.531	15.506	0.0	0.0	0.0
6.47	0.0	0.163	0.036	0.199	9.458	0.251			17.683	15.828	0.003	0.048	1.354
7.47	0.002	0.155	0.044	0.199	9.753	0.253			19.936	18.428	0.011	0.260	10.212
8.47	0.003	0.137	0.057	0.194	9.506	0.243			22.358	22.289	0.023	0.516	33.031
9.47	0.005	0.114	0.077	0.191	9.450	0.236			22.523	24.247	0.033	0.683	68.701
10.47	0.014	0.081	0.101	0.182	9.445	0.220			22.523	25.986	0.046	1.011	118.930
11.47	0.029	0.049	0.126	0.174	9.339	0.209			22.523	27.103	0.048	0.990	178.998
12.47	0.054	0.030	0.131	0.161	9.625	0.201		0.0	22.523	27.483	0.050	1.090	241.218
13.47	0.089	0.018	0.133	0.151					22.523	28.206	0.048	1.050	305.490
14.47	0.124	0.010	0.130	0.140	9.772	0.181			22.523	29.008	0.041	0.930	365.105
15.47	0.152	0.005	0.125	0.130	9.488	0.172			22.523	28.558	0.030	0.703	414.504
16.47	0.164	0.004	0.117	0.121	9.907	0.166	0.003		22.523	28.322	0.019	0.443	449.352
17.47	0.161	0.003	0.109	0.112	9.732	0.161	0.004		22.523	27.339	0.008	0.182	468.571

CHAMBER NO. 4
9- 8-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 066 : EKMA/NOX(0.20)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	PAN PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	0.002	0.002	0.001	0.003	1.843				18.220	16.975	0.0	0.0	0.0
1.63	0.000	0.001	0.001	0.002					18.143	16.625	0.0	0.0	0.0
2.63	0.0	0.000	0.002	0.002	1.632				17.913	16.375	0.0	0.0	0.0
3.63	0.0	0.002	0.002	0.004	10.563				17.151	16.056	0.0	0.0	0.0
4.63	0.0	0.156	0.037	0.193	10.628	0.544			16.248	15.586	0.0	0.0	0.0
5.63	0.0	0.155	0.037	0.192	10.452	0.540			17.760	15.506	0.0	0.0	0.0
6.63	0.0	0.161	0.039	0.200	10.505	0.535			17.531	15.828	0.003	0.048	1.814
7.63	0.002	0.149	0.051	0.199	10.394	0.529			20.333	18.428	0.011	0.260	12.708
8.63	0.004	0.115	0.079	0.195	10.624	0.521			22.523	22.289	0.023	0.516	37.985
9.63	0.016	0.072	0.118	0.190	10.350	0.494			22.689	24.247	0.033	0.683	75.257
10.63	0.059	0.028	0.149	0.177	10.377	0.458			22.689	25.986	0.046	1.011	128.636
11.63	0.158	0.007	0.152	0.159	10.470	0.423			22.606	27.103	0.048	0.990	188.502
12.63	0.285	0.004	0.133	0.137	10.576	0.387		0.280	22.606	27.483	0.050	1.090	251.682
13.63	0.422	0.001	0.109	0.110	10.573	0.352			22.606	28.206	0.048	1.050	315.570
14.63	0.521	0.001	0.092	0.093					22.606	29.008	0.041	0.930	374.033
15.63	0.568	0.001	0.078	0.079	10.624	0.318	0.043		22.606	28.558	0.030	0.703	421.253
16.63	0.573	0.002	0.064	0.066	10.894	0.309	0.043		22.689	28.322	0.019	0.443	453.604
17.63	0.556	0.004	0.053	0.057	10.631	0.302	0.042		22.606	27.339	0.008	0.182	470.319

CHAMBER NO. 1
9- 9-78

94 % SUNSHINE

RTI SNUG CHAMBER STUDY
RUN 067 : EKMA/NOX(0.40)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	0.001	0.001	0.002	0.003				18.916	17.758	0.0	0.0	0.0
1.13	0.000	0.0	0.001	0.001				18.528	17.592	0.0	0.0	0.0
2.13	0.000	0.000	0.0	0.000				17.913	17.117	0.0	0.0	0.0
3.13	0.000	0.001	0.000	0.002	1.203			17.379	16.697	0.0	0.0	0.0
4.13	0.000	0.003	0.001	0.004	9.935	0.076		17.303	16.592	0.0	0.0	0.0
5.13	0.000	0.307	0.025	0.332	9.864	0.073		16.248	16.208	0.0	0.0	0.0
6.13	0.001	0.320	0.078	0.398	9.702	0.066		15.356	15.817	0.003	0.949	0.382
7.13	0.001	0.311	0.078	0.389	9.699	0.064		17.379	17.886	0.012	0.249	4.882
8.13	0.001	0.303	0.072	0.375	9.620	0.068	0.0	21.135	21.114	0.025	0.542	22.108
9.13	0.002	0.290	0.079	0.369	9.586	0.062	0.0	23.777	25.072	0.038	0.922	56.812
10.13	0.002	0.287	0.081	0.368	9.430	0.058		23.946	26.648	0.048	1.025	107.715
11.13	0.003	0.281	0.080	0.362				24.030	28.069	0.055	1.149	170.182
12.13	0.003	0.270	0.088	0.358			0.0	23.946	29.206	0.055	1.160	239.208
13.13	0.003	0.257	0.094	0.350				23.946	30.147	0.051	1.107	308.394
14.13	0.003	0.245	0.092	0.338				23.946	30.200	0.043	0.955	373.628
15.13	0.003	0.238	0.098	0.336				23.946	30.400	0.031	0.719	429.087
16.13	0.002	0.226	0.103	0.329				23.946	30.331	0.018	0.428	469.957
17.13	0.002	0.221	0.100	0.321				23.946	29.111	0.008	0.172	493.640

CHAMBER NO. 2
9- 9-78

94 % SUNSHINE

KTI SMOG CHAMBER STUDY
RUN 067 : EKMA/NOX(0.40)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	0.001	0.000	0.001	0.002				18.839	17.758	0.0	0.0	0.0
1.30	0.000	0.0	0.002	0.002				18.528	17.592	0.0	0.0	0.0
2.30	0.000	0.000	0.001	0.001				17.836	17.117	0.0	0.0	0.0
3.30	0.000	0.000	0.000	0.001	1.831			17.379	16.697	0.0	0.0	0.0
4.30	0.000	0.002	0.000	0.002	10.560	0.131		17.000	16.392	0.0	0.0	0.0
5.30	0.000	0.321	0.078	0.399	10.483	0.129		16.099	16.208	0.0	0.0	0.0
6.30	0.001	0.319	0.079	0.398	10.563	0.130		15.556	15.817	0.003	0.049	0.882
7.30	0.001	0.310	0.078	0.389	10.553	0.128		18.761	17.886	0.012	0.249	7.422
8.30	0.002	0.297	0.079	0.377	10.406	0.125	0.0	22.080	21.114	0.025	0.542	27.636
9.30	0.002	0.289	0.085	0.374	10.370	0.124	0.0	23.356	25.072	0.038	0.822	65.196
10.30	0.003	0.277	0.097	0.374	10.218	0.115		23.356	26.644	0.048	1.025	118.170
11.30	0.004	0.268	0.100	0.368				23.356	28.069	0.055	1.149	181.902
12.30	0.004	0.254	0.114	0.368			0.0	23.356	29.206	0.055	1.160	251.040
13.30	0.004	0.238	0.122	0.359				23.356	30.147	0.051	1.107	319.685
14.30	0.005	0.228	0.124	0.352				23.356	30.200	0.043	0.955	383.369
15.30	0.004	0.217	0.131	0.349				23.356	30.400	0.031	0.719	436.421
16.30	0.005	0.209	0.131	0.340				23.356	30.331	0.018	0.428	474.323
17.30	0.002	0.200	0.131	0.332				23.356	29.111	0.008	0.172	495.345

CHAMBER NO. 3
9- 9-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 067 : EKMA/NOX(0.40)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	NMHC PPM	CN-S K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	0.001	0.001	0.003	0.004				18.528	17.758	0.0	0.0	0.0
1.47	0.000	0.000	0.002	0.002				18.143	17.592	0.0	0.0	0.0
2.47	0.000	0.001	0.002	0.003				17.683	17.117	0.0	0.0	0.0
3.47	0.000	0.002	0.000	0.003	0.630			17.151	16.697	0.0	0.0	0.0
4.47	0.000	0.003	0.002	0.006	6.237	0.264		16.849	16.392	0.0	0.0	0.0
5.47	0.000	0.004	0.002	0.006	9.470	0.258		15.727	16.208	0.0	0.0	0.0
6.47	0.001	0.459	0.072	0.531	9.561	0.257		15.209	15.817	0.003	0.049	1.382
7.47	0.001	0.442	0.078	0.521	9.398	0.255		18.761	17.886	0.012	0.249	9.962
8.47	0.001	0.419	0.079	0.498	9.377	0.253	0.0	22.523	21.114	0.025	0.542	35.164
9.47	0.002	0.395	0.104	0.499	9.235	0.248	0.0	23.524	25.072	0.038	0.822	73.580
10.47	0.002	0.364	0.128	0.492	9.112	0.244		23.608	26.644	0.048	1.025	128.625
11.47	0.003	0.335	0.155	0.491				23.608	28.069	0.055	1.149	193.622
12.47	0.004	0.304	0.179	0.483			0.0	23.524	29.206	0.055	1.160	262.872
13.47	0.005	0.272	0.200	0.472				23.608	30.147	0.051	1.107	330.977
14.47	0.006	0.251	0.206	0.457				23.608	30.200	0.043	0.955	393.110
15.47	0.005	0.231	0.222	0.454				23.608	30.460	0.031	0.719	443.755
16.47	0.004	0.218	0.226	0.445				23.608	30.351	0.018	0.428	478.688
17.47	0.002	0.209	0.219	0.428				23.608	27.111	0.008	0.172	497.149

CHAMBER NO. 4
9- 9-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 067 : EKMA/NOX(0.40)

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	NMHC PPM	CN-5 K-CN/CM3	DEWPT DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	0.001	0.001	0.003	0.004				18.683	17.758	0.0	0.0	0.0
1.63	0.000	0.001	0.002	0.003				18.143	17.592	0.0	0.0	0.0
2.63	0.000	0.001	0.002	0.003	1.523			17.760	17.117	0.0	0.0	0.0
3.63	0.000	0.003	0.001	0.004	1.463	0.521		17.227	16.697	0.0	0.0	0.0
4.63	0.000	0.298	0.0	0.298	1.453	0.535		16.623	16.392	0.0	0.0	0.0
5.63	0.000	0.298	0.077	0.375	10.238	0.530		15.727	16.208	0.0	0.0	0.0
6.63	0.001	0.308	0.083	0.391	10.250	0.530		15.504	15.817	0.003	0.049	1.852
7.63	0.001	0.288	0.090	0.378	10.166	0.529		19.699	17.886	0.012	0.249	12.352
8.63	0.002	0.254	0.112	0.366	10.070	0.517	0.0	23.356	21.114	0.025	0.542	38.368
9.63	0.004	0.211	0.153	0.364	10.100	0.497	0.0	24.030	25.072	0.038	0.822	81.472
10.63	0.011	0.154	0.201	0.355				24.030	26.644	0.048	1.025	138.465
11.63	0.026	0.097	0.241	0.339				24.030	28.069	0.055	1.149	204.652
12.63	0.059	0.048	0.271	0.320			0.0	23.946	29.206	0.055	1.160	274.008
13.63	0.116	0.023	0.276	0.299				23.946	30.147	0.051	1.107	341.604
14.63	0.174	0.015	0.256	0.271				23.946	30.200	0.043	0.955	402.278
15.63	0.219	0.009	0.240	0.249				23.946	30.400	0.031	0.719	450.657
16.63	0.233	0.005	0.217	0.222				23.946	30.331	0.018	0.428	482.797
17.63	0.217	0.004	0.177	0.181					29.111	0.008	0.172	498.801

CHAMBER NO. 1
9-26-78

98 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 075 : EKMA/NOX(0.20)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
												12.736	14.714
0.13	0.0	0.002	0.002	0.003								12.234	14.237
1.13	0.0	0.001	0.004	0.005								12.592	14.577
2.13	0.0	0.001	0.0	0.001								12.664	14.646
3.13	0.0	0.002	0.0	0.002	1.184							12.449	14.441
4.13	0.0	0.0	0.000	0.000	1.187							12.449	14.442
5.13	0.0	0.146	0.001	0.147	10.619	0.037	0.018				0.0	13.529	15.499
6.13	0.0	0.163	0.032	0.195	10.509	0.037	0.018	0.598	0.749	0.0		12.951	14.926
7.13	0.0	0.159	0.041	0.200	10.519	0.042	0.022	0.602	0.597		11.500	14.767	16.792
8.13	0.002	0.158	0.040	0.198	10.455	0.043	0.018	0.567	0.659	0.0		18.451	21.219
9.13	0.003	0.148	0.041	0.189	10.446	0.052	0.020	0.537	0.559			20.693	24.688
10.13	0.005	0.133	0.050	0.183	10.339	0.038	0.010	0.512	0.501	8.287	16.000	21.703	25.940
11.13	0.006	0.124	0.058	0.182	10.289	0.038	0.007	0.485	0.546			21.703	25.939
12.13	0.009	0.111	0.063	0.175	10.149	0.050	0.010	0.474	0.437	0.0	17.500	21.703	25.939
13.13	0.009	0.097	0.068	0.165	10.126	0.039	0.006	0.452	0.484			21.703	25.939
14.13	0.011	0.088	0.074	0.161	10.017	0.036		0.434	0.427	4.875	17.500	21.540	25.682
15.13	0.011	0.077	0.076	0.154	9.978	0.033		0.413	0.423			21.540	25.685
16.13	0.009	0.072	0.079	0.151	9.878	0.035		0.392	0.426	0.0	14.500		

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	17.646	12.081	0.0	0.0	0.0
1.13	17.061	12.092	0.0	0.0	0.0
2.13	17.008	12.796	0.0	0.0	0.0
3.13	16.849	12.289	0.0	0.0	0.0
4.13	15.148	12.078	0.0	0.0	0.0
5.13	14.297	12.406	0.0	0.0	0.0
6.13	14.510	12.453	0.002	0.026	0.203
7.13	14.032	13.089	0.009	0.207	3.175
8.13	17.539	14.631	0.021	0.474	17.677
9.13	21.154	16.742	0.034	0.749	48.262
10.13	24.343	18.808	0.046	0.967	94.903
11.13	26.522	20.006	0.052	1.058	153.632
12.13	27.638	20.633	0.053	0.952	216.285
13.13	27.372	21.267	0.049	1.069	274.318
14.13	27.638	21.581	0.040	0.901	337.147
15.13	27.532	21.311	0.028	0.625	389.054
16.13	25.353	20.825	0.016	0.349	424.401

CHAMBER NO. 2
9-26-78

98 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 075 : EKMA/NOX(0.20)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.30	0.0	0.001	0.0	0.001								12.520	14.510
1.30	0.0	0.0	0.003	0.003								12.091	14.106
2.30	0.0	0.0	0.0	0.0								12.736	14.716
3.30	0.0	0.0	0.0	0.0	1.461							13.095	15.067
4.30	0.0	0.0	0.005	0.005								12.664	14.648
5.30	0.0	0.159	0.003	0.162	10.958	0.064	0.031				0.0	12.520	14.511
6.30	0.0	0.165	0.034	0.200	10.870	0.087	0.042	0.759	0.685	0.0		13.529	15.500
7.30	0.0	0.162	0.043	0.205	10.869	0.091	0.043	0.515	0.480		9.600	13.168	15.139
8.30	0.002	0.155	0.040	0.195	10.851	0.088	0.040	0.451	0.465	0.0		15.283	17.558
9.30	0.005	0.144	0.048	0.192	10.654	0.086	0.038	0.402	0.416			18.451	21.219
10.30	0.007	0.126	0.064	0.190	10.588	0.086	0.030	0.363	0.427	3.599	12.000	20.095	23.501
11.30	0.010	0.114	0.078	0.192	10.624	0.085	0.024	0.328	0.301			20.333	23.847
12.30	0.015	0.096	0.089	0.185	10.543	0.082	0.021	0.301	0.311	0.0	12.500	20.174	23.613
13.30	0.019	0.078	0.098	0.176	10.497	0.083	0.019	0.270	0.254			20.095	23.497
14.30	0.023	0.068	0.111	0.179	10.413	0.078	0.015	0.246	0.256	0.0	12.000	20.015	23.382
15.30	0.022	0.055	0.112	0.167	10.364	0.075	0.010	0.222	0.201			19.936	23.268
16.30	0.016	0.044	0.115	0.159	10.304	0.077	0.015	0.202	0.181	0.0	12.500	19.936	27.272

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	14.616	12.081	0.0	0.0	0.0
1.30	14.350	12.092	0.0	0.0	0.0
2.30	14.882	12.796	0.0	0.0	0.0
3.30	14.776	12.289	0.0	0.0	0.0
4.30	14.404	12.078	0.0	0.0	0.0
5.30	13.872	12.406	0.0	0.0	0.0
6.30	14.138	12.453	0.002	0.026	0.468
7.30	14.404	13.089	0.009	0.207	5.286
8.30	18.018	14.631	0.021	0.474	22.512
9.30	21.632	16.742	0.034	0.749	55.902
10.30	25.246	18.808	0.046	0.967	104.766
11.30	27.053	20.006	0.052	1.058	164.424
12.30	28.063	20.633	0.053	0.952	225.996
13.30	27.851	21.267	0.049	1.069	285.221
14.30	27.904	21.581	0.040	0.901	346.337
15.30	27.744	21.311	0.028	0.625	395.429
16.30	24.715	20.825	0.016	0.349	427.961

CHAMBER NO. 3
9-26-78

98 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 075 : EKMA/NOX(0.20)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.47	0.0	0.000	0.003	0.003									12.091
1.47	0.0	0.0	0.003	0.003									11.876
2.47	0.0	0.002	0.0	0.002									12.736
3.47	0.0	0.0	0.003	0.003	0.681								12.951
4.47	0.0	0.001	0.002	0.003	10.135	0.041	0.016						12.520
5.47	0.0	0.149	0.037	0.187	10.102	0.141	0.067					0.210	12.592
6.47	0.0	0.173	0.036	0.209	10.051	0.184	0.092		0.772	0.796	0.0		13.312
7.47	0.0	0.165	0.042	0.207	9.994	0.187	0.088		0.684	0.646		8.500	13.312
8.47	0.003	0.146	0.056	0.202	10.018	0.188	0.086		0.660	0.644	3.047		15.875
9.47	0.008	0.117	0.074	0.191	9.880	0.210	0.072		0.642				19.150
10.47	0.015	0.086	0.099	0.184	9.899	0.176	0.056		0.621		7.492	10.000	21.054
11.47	0.029	0.054	0.126	0.180	9.887	0.178	0.049		0.592	0.521			21.459
12.47	0.051	0.036	0.133	0.169	9.827	0.169	0.035	0.002	0.577	0.598	4.190	11.500	21.377
13.47	0.076	0.022	0.135	0.158	9.799	0.165	0.028	0.004	0.553	0.561			21.216
14.47	0.098	0.014	0.131	0.145	9.759	0.165	0.021	0.006	0.532	0.555	9.142	12.000	21.135
15.47	0.109	0.005	0.131	0.136	9.709	0.164	0.019	0.007	0.509	0.495			21.054
16.47	0.109	0.007	0.122	0.129	9.659	0.159	0.015	0.008	0.486	0.516	6.730	12.000	21.054

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	14.105	15.626	12.081	0.0	0.0	0.0
1.47	13.907	15.148	12.092	0.0	0.0	0.0
2.47	14.716	15.360	12.796	0.0	0.0	0.0
3.47	14.926	14.862	12.289	0.0	0.0	0.0
4.47	14.510	14.244	12.078	0.0	0.0	0.0
5.47	14.579	14.032	12.406	0.0	0.0	0.0
6.47	15.282	13.978	12.453	0.002	0.026	0.733
7.47	15.281	14.988	13.089	0.009	0.207	7.397
8.47	18.030	18.337	14.631	0.021	0.474	27.347
9.47	22.166	22.217	16.742	0.034	0.749	63.542
10.47	24.932	25.565	18.808	0.046	0.967	114.629
11.47	25.556	27.000	20.006	0.052	1.058	175.215
12.47	25.428	28.223	20.633	0.053	0.952	235.706
13.47	25.176	28.329	21.267	0.049	1.069	296.125
14.47	25.053	27.904	21.581	0.040	0.901	355.528
15.47	24.931	26.150	21.311	0.028	0.625	401.804
16.47	24.933	24.662	20.825	0.016	0.549	431.521

CHAMBER NO. 4
9-26-78

98 % SUNSHINE

KII SMOG CHAMBER STUDY
RUN 075 : ERMA/NOX(0.20)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.63	0.0	0.0	0.0	0.0									12.234
1.63	0.0	0.000	0.001	0.001									12.520
2.63	0.0	0.000	0.002	0.002									13.168
3.63	0.0	0.0	0.004	0.004	1.043								12.879
4.63	0.0	0.0	0.003	0.003	10.437	0.247	0.117						12.592
5.63	0.0	0.143	0.040	0.183	10.390	0.248	0.118					0.0	12.879
6.63	0.0	0.159	0.039	0.198	10.365	0.270	0.129		0.686	0.719	0.0		13.168
7.63	0.0	0.152	0.048	0.199	10.284	0.274	0.124		0.588	0.685		8.500	13.529
8.63	0.005	0.123	0.072	0.196	10.317	0.272	0.117		0.550	0.538	0.0		16.099
9.63	0.012	0.092	0.093	0.186	10.249	0.265	0.098		0.527	0.565			14.307
10.63	0.030	0.051	0.124	0.174	10.195	0.261	0.082	0.001	0.501		5.750	10.000	20.572
11.63	0.066	0.024	0.142	0.166	10.213	0.256	0.064	0.004	0.467	0.442			20.813
12.63	0.118	0.008	0.142	0.150	10.211	0.248	0.048	0.008	0.443	0.439	0.0	11.500	20.652
13.63	0.171	0.003	0.130	0.134	10.043	0.228	0.032	0.014	0.419	0.461			20.572
14.63	0.215	0.003	0.120	0.123	10.114	0.235	0.020	0.022	0.386	0.373	9.300	11.000	20.413
15.63	0.237	0.002	0.110	0.112	10.009	0.241	0.015	0.027	0.358	0.363			20.333
16.63	0.235	0.0	0.094	0.094	9.932	0.227	0.007	0.031	0.332	0.318	7.800	10.000	20.253

TIME (EST)	H2O K-PPM	CTEMP DEG C	ITEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	14.239	15.307	12.081	0.0	0.0	0.0
1.63	14.509	15.573	12.092	0.0	0.0	0.0
2.63	15.138	15.467	12.796	0.0	0.0	0.0
3.63	14.855	14.988	12.289	0.0	0.0	0.0
4.63	14.579	14.457	12.078	0.0	0.0	0.0
5.63	14.856	14.457	12.406	0.0	0.0	0.0
6.63	15.139	14.032	12.453	0.002	0.026	0.983
7.63	15.499	15.679	13.089	0.009	0.207	9.385
8.63	18.289	18.921	14.631	0.021	0.474	31.897
9.63	22.382	22.801	16.742	0.038	0.749	70.732
10.63	24.204	25.725	18.808	0.046	0.967	123.913
11.63	24.563	26.522	20.006	0.052	1.058	185.372
12.63	24.321	27.748	20.633	0.053	0.952	244.845
13.63	24.201	28.169	21.267	0.049	1.069	306.388
14.63	23.964	27.479	21.581	0.040	0.901	364.177
15.63	23.849	25.406	21.311	0.028	0.625	407.804
16.63	23.734	23.864	20.825	0.016	0.349	434.871

CHAMBER NO. 1
9-28-78

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 076 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN
7.47					1.128	1.295							
8.13	0.003	0.034	0.011	0.045	1.099	1.314		2.300	12.664	14.646	16.211	13.653	0.020
9.13	0.014	0.026	0.016	0.042	1.060	1.116	7.800		17.760	20.314	24.343	17.894	0.032
10.13	0.030	0.015	0.023	0.038	1.010	1.029			22.358	26.998	26.309	22.436	0.042
11.13	0.059	0.008	0.029	0.037	0.967	0.811			24.030	29.863	29.126	23.728	0.048
12.13	0.096	0.005	0.024	0.029	0.894	0.837	30.956	4.800	25.143	31.914	30.614	24.247	0.048
13.13	0.132	0.004	0.022	0.026	0.834	0.920			25.403	32.410	31.518	25.067	0.044
14.13	0.158	0.003	0.018	0.020	0.778	0.755		5.700	25.230	32.077	32.156	25.058	0.035
15.13	0.167	0.004	0.015	0.018	0.732	0.723	36.319		25.143	31.914	30.986	24.972	0.021
16.13	0.162	0.004	0.016	0.019	0.713	0.736			25.057	31.754	28.435	24.400	0.011

TIME (EST)	SR L/MIN
7.47	
8.13	0.450
9.13	0.711
10.13	0.906
11.13	1.010
12.13	1.045
13.13	0.981
14.13	0.796
15.13	0.507
16.13	0.291

CHAMBER NO. 2
9-28-78

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 076 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN
7.63					0.995	1.287							
8.30	0.003	0.035	0.009	0.043	0.933	1.182		2.400	13.529	15.497	17.061	13.653	0.020
9.30	0.014	0.027	0.017	0.044	0.843	0.875	9.307		18.297	21.013	22.961	17.894	0.032
10.30	0.032	0.016	0.026	0.042	0.768	0.755			22.194	26.727	27.957	22.436	0.042
11.30	0.062	0.010	0.027	0.037	0.701	0.702			23.777	29.410	30.083	23.728	0.048
12.30	0.102	0.006	0.029	0.035	0.643	0.647	28.045	2.900	24.200	30.165	31.412	24.247	0.048
13.30	0.141	0.006	0.022	0.028	0.605	0.580			24.200	30.164	32.315	25.067	0.044
14.30	0.167	0.003	0.025	0.028	0.553	0.608		4.500	24.115	30.011	31.890	25.058	0.035
15.30	0.179	0.004	0.019	0.023	0.516	0.510	27.796		24.030	29.860	31.465	24.972	0.021
16.30	0.177	0.001	0.022	0.023	0.482	0.425			24.030	29.864	28.701	24.400	0.011

TIME (EST)	SR L/MIN
7.63	
8.30	0.450
9.30	0.711
10.30	0.906
11.30	1.010
12.30	1.045
13.30	0.981
14.30	0.796
15.30	0.507
16.30	0.291

CHAMBER NO. 3
9-28-78

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 076 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN
7.80					1.237	1.404							
8.47	0.005	0.035	0.012	0.047	1.206	1.332		4.200	14.328	16.322	18.071	13.653	0.020
9.47	0.018	0.024	0.021	0.045	1.164	1.142	10.412		19.307	22.381	23.811	17.894	0.032
10.47	0.041	0.015	0.026	0.041	1.123	1.287			22.938	27.961	28.595	22.436	0.042
11.47	0.077	0.009	0.028	0.037	1.055	1.131			24.456	30.632	30.614	23.728	0.048
12.47	0.120	0.004	0.028	0.032	0.997	1.037	42.537	3.600	25.057	31.749	31.624	24.247	0.048
13.47	0.162	0.004	0.023	0.027	0.959	0.930			25.057	31.749	31.518	25.067	0.044
14.47	0.188	0.002	0.023	0.025	0.922	1.056		4.800	24.971	31.587	31.199	25.058	0.035
15.47	0.195	0.003	0.022	0.024	0.896	0.911	54.346		24.885	31.427	30.030	24.972	0.021
16.47	0.189	0.001	0.018	0.019	0.867	1.050			24.885	31.430	27.957	24.400	0.011

TIME (EST)	SR L/MIN
7.80	
8.47	0.450
9.47	0.711
10.47	0.906
11.47	1.010
12.47	1.045
13.47	0.981
14.47	0.796
15.47	0.507
16.47	0.291

CHAMBER NO. 4
9-28-78

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 076 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN
7.97					1.219	1.359							
8.63	0.006	0.032	0.014	0.046	1.176	1.378		4.500	14.988	17.031	18.975	13.653	0.020
9.63	0.022	0.020	0.023	0.043	1.123	1.020	9.900		20.095	23.501	24.502	17.894	0.032
10.63	0.050	0.010	0.032	0.042	1.060	1.156			23.440	28.821	28.754	22.436	0.042
11.63	0.087	0.008	0.028	0.036	0.993	1.233			24.885	31.427	30.083	23.728	0.048
12.63	0.133	0.005	0.027	0.032	0.971	0.932	38.700	2.900	24.030	29.860	31.412	24.247	0.048
13.63	0.173	0.004	0.020	0.024	0.925	0.911			23.861	29.556	32.315	25.067	0.044
14.63	0.194	0.003	0.019	0.022	0.881	0.881		4.000	23.946	29.710	30.349	25.058	0.035
15.63	0.199	0.002	0.019	0.020	0.843	0.798	48.300		23.946	29.712	28.754	24.972	0.021
16.63	0.193	0.0	0.018	0.018	0.805	0.742			23.946	29.715	27.000	24.400	0.011

TIME (EST)	SR L/MIN
7.97	
8.63	0.450
9.63	0.711
10.63	0.906
11.63	1.010
12.63	1.045
13.63	0.981
14.63	0.796
15.63	0.507
16.63	0.291

RTI SMOG CHAMBER STUDY
RUN 077 : NOX(VAR.)/SO2

CHAMBER NO. 1
10- 2-78

97 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
										9.889	12.185	15.679	9.461
0.13	0.0	0.004	0.000	0.004		0.000	0.000			9.889	12.185	15.148	9.167
1.13	0.0	0.004	0.000	0.004		0.000	0.000					15.041	8.967
2.13	0.0	0.004	0.001	0.004		0.000	0.000			9.183	11.620	14.776	8.886
3.13	0.0	0.003	0.000	0.003		0.000	0.000			9.042	11.511	13.925	8.733
4.13	0.0	0.000	0.001	0.002		0.000	0.000			9.748	12.072	12.809	8.875
5.13	0.0	0.030	0.007	0.038		0.831	0.852	0.0	0.0	8.337	10.976	11.321	8.758
6.13	0.0	0.039	0.009	0.048		0.728	0.692		7.100	8.760	11.295	11.799	10.531
7.13	0.0	0.039	0.008	0.047		0.684	0.642	10.969	8.000	13.674	15.644	17.061	14.542
8.13	0.003	0.037	0.011	0.048		0.629	0.621			17.836	20.416	20.622	16.683
9.13	0.007	0.037	0.015	0.052		0.595	0.562	28.762	3.100	20.333	23.852	23.280	18.381
10.13	0.011	0.036	0.017	0.053	1.194	0.564	0.560			21.866	26.202	25.459	19.519
11.13	0.015	0.031	0.017	0.047	1.139	0.538	0.504	27.056		23.021	28.105	26.628	20.281
12.13	0.019	0.033	0.020	0.053		0.508	0.546			23.356	28.678	27.266	20.886
13.13	0.024	0.028	0.021	0.048	1.113	0.457	0.375		1.200	23.272	28.533	27.160	21.278
14.13	0.027	0.024	0.021	0.045		0.459	0.412	19.500		23.105	28.246	27.532	21.078
15.13	0.028	0.016	0.022	0.038	1.102	0.426	0.394			22.523	27.273	24.130	20.489
16.13	0.023	0.014	0.023	0.037									

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	0.0	0.0	0.0
1.13	0.0	0.0	0.0
2.13	0.0	0.0	0.0
3.13	0.0	0.0	0.0
4.13	0.0	0.0	0.0
5.13	0.0	0.0	0.0
6.13	0.002	0.020	0.156
7.13	0.009	0.182	2.620
8.13	0.022	0.470	15.786
9.13	0.035	0.730	46.014
10.13	0.045	0.943	91.475
11.13	0.051	1.053	148.913
12.13	0.051	1.040	211.992
13.13	0.047	0.983	273.947
14.13	0.038	0.846	331.858
15.13	0.023	0.463	379.631
16.13	0.013	0.238	405.656

CHAMBER NO. 2
10- 2-78

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 077 : NOX(VAR.)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.30	0.0	0.004	0.000	0.004						10.031	12.302	13.022	9.461
1.30	0.0	0.004	0.000	0.004		0.000	0.000			9.607	11.958	12.703	9.167
2.30	0.0	0.004	0.001	0.004		0.000	0.000			9.466	11.845	12.171	8.967
3.30	0.0	0.003	0.000	0.003		0.000	0.000			9.324	11.733	12.224	8.886
4.30	0.0	0.002	0.000	0.002		0.000	0.000			8.831	11.349	11.161	8.733
5.30	0.0	0.066	0.017	0.083		0.000	0.000			9.324	11.733	11.587	8.875
6.30	0.0	0.083	0.021	0.104		0.715	0.767	0.0	0.0	8.337	10.976	10.643	8.758
7.30	0.0	0.083	0.021	0.104		0.591	0.544		6.300	8.901	11.403	12.118	10.531
8.30	0.003	0.083	0.021	0.104		0.555	0.618	5.088	6.800	13.674	15.644	17.805	14.542
9.30	0.004	0.084	0.023	0.106		0.502	0.520			17.075	19.458	21.526	16.683
10.30	0.006	0.084	0.026	0.109	1.394	0.477	0.465	11.168	2.700	18.761	21.631	24.290	18.381
11.30	0.008	0.077	0.027	0.104	1.359	0.452	0.412			18.606	21.420	26.416	19.519
12.30	0.009	0.074	0.030	0.104		0.425	0.405	11.044		18.606	21.418	28.542	20.281
13.30	0.009	0.069	0.032	0.101		0.387	0.349			18.606	21.418	28.010	20.886
14.30	0.009	0.064	0.035	0.099		0.381	0.341		1.400	18.683	21.522	28.276	21.278
15.30	0.006	0.058	0.036	0.094	1.335	0.363	0.347	8.190		18.839	21.734	26.788	21.078
16.30	0.004	0.053	0.039	0.093		0.339	0.317			18.528	21.320	23.652	20.489

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	0.0	0.0	0.0
1.30	0.0	0.0	0.0
2.30	0.0	0.0	0.0
3.30	0.0	0.0	0.0
4.30	0.0	0.0	0.0
5.30	0.0	0.0	0.0
6.30	0.002	0.020	0.360
7.30	0.009	0.182	4.476
8.30	0.022	0.470	20.580
9.30	0.035	0.730	53.460
10.30	0.045	0.943	101.094
11.30	0.051	1.053	159.654
12.30	0.051	1.040	222.600
13.30	0.047	0.983	283.974
14.30	0.038	0.846	340.488
15.30	0.023	0.463	384.353
16.30	0.013	0.238	408.083

CHAMBER NO. 3
10- 2-78

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 077 : NOX(VAR.)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.47	0.0	0.003	0.0	0.003						9.748	12.071	13.978	9.461
1.47	0.0	0.003	0.000	0.003		0.000	0.000			9.254	11.677	13.181	9.167
2.47	0.0	0.004	0.001	0.004		0.000	0.000			9.042	11.511	13.022	8.967
3.47	0.0	0.003	0.000	0.003		0.000	0.000			8.972	11.457	12.809	8.886
4.47	0.0	0.122	0.0	0.122		0.000	0.000			8.478	11.081	12.384	8.733
5.47	0.0	0.165	0.030	0.195		0.000	0.000			8.901	11.403	11.906	8.875
6.47	0.0	0.165	0.038	0.203		0.835	0.804	0.0	0.0	8.196	10.871	10.949	8.758
7.47	0.0	0.164	0.039	0.203		0.763	0.696		4.800	9.748	12.071	13.713	10.531
8.47	0.002	0.163	0.037	0.200		0.743	0.901	6.476	10.000	14.767	16.792	18.496	14.542
9.47	0.003	0.163	0.038	0.202		0.707	0.672			18.374	21.116	21.898	16.683
10.47	0.004	0.160	0.039	0.199	0.579	0.691	0.644	13.206	2.600	20.174	23.617	24.608	18.381
11.47	0.004	0.153	0.040	0.193	0.562	0.671	0.681			20.893	24.685	26.681	19.519
12.47	0.005	0.147	0.044	0.191		0.630	0.712	16.380		20.893	24.685	27.000	20.281
13.47	0.005	0.141	0.046	0.187		0.604	0.533			21.135	25.052	28.010	20.886
14.47	0.004	0.133	0.050	0.183		0.612	0.615		0.900	21.297	25.302	28.063	21.278
15.47	0.003	0.127	0.051	0.178	0.546	0.595	0.582	15.491		21.459	25.557	25.778	21.078
16.47	0.002	0.121	0.055	0.176		0.567	0.543			20.652	24.326	23.120	20.489

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	0.0	0.0	0.0
1.47	0.0	0.0	0.0
2.47	0.0	0.0	0.0
3.47	0.0	0.0	0.0
4.47	0.0	0.0	0.0
5.47	0.0	0.0	0.0
6.47	0.002	0.020	0.564
7.47	0.009	0.182	6.332
8.47	0.022	0.470	25.374
9.47	0.035	0.730	60.906
10.47	0.045	0.943	110.713
11.47	0.051	1.053	170.395
12.47	0.051	1.040	233.208
13.47	0.047	0.983	294.000
14.47	0.038	0.846	349.117
15.47	0.023	0.463	389.076
16.47	0.013	0.238	410.510

CHAMBER NO. 4
10- 2-75

97 % SUNSHINE

NTI SMOG CHAMBER STUDY
RUN 077 : NOX(VAR.)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	I-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
										10.031	12.302	13.978	9.461
0.63	0.0	0.004	0.000	0.004						9.395	11.788	13.660	9.167
1.63	0.0	0.004	0.000	0.004		0.000	0.000			9.395	11.788	13.713	8.967
2.63	0.0	0.004	0.001	0.004		0.000	0.000			9.183	11.621	13.022	8.886
3.63	0.0	0.003	0.000	0.003		0.000	0.000			9.113	11.566	13.022	8.733
4.63	0.0	0.249	0.060	0.310		0.000	0.000			8.760	11.294	12.012	8.875
5.63	0.0	0.319	0.082	0.401		0.000	0.000			7.985	10.716	11.055	8.758
6.63	0.0	0.316	0.082	0.398		0.717	0.658	0.0	0.0	10.455	12.656	14.669	10.531
7.63	0.0	0.311	0.086	0.398		0.647	0.578		3.400	15.135	17.193	19.134	14.542
8.63	0.002	0.309	0.080	0.390		0.629	0.712	3.282	3.800	18.143	20.812	22.270	16.683
9.63	0.002	0.307	0.078	0.385		0.599	0.536			19.463	22.599	24.874	18.361
10.63	0.003	0.304	0.074	0.378	1.008	0.589	0.568	6.564	2.000	19.542	22.708	26.362	19.519
11.63	0.003	0.302	0.071	0.373	0.975	0.573	0.643			19.463	22.597	26.256	20.281
12.63	0.002	0.295	0.074	0.369		0.538	0.617	7.650		19.542	22.706	27.851	20.886
13.63	0.002	0.291	0.074	0.365		0.516	0.507			19.621	22.818	27.479	21.278
14.63	0.002	0.284	0.074	0.358		0.521	0.561		1.300	19.542	22.710	24.555	21.078
15.63	0.001	0.278	0.072	0.350	0.959	0.502	0.483	10.293		19.463	22.601	22.695	20.489
16.63	0.001	0.270	0.076	0.346		0.478	0.509						

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	0.0	0.0	0.0
1.63	0.0	0.0	0.0
2.63	0.0	0.0	0.0
3.63	0.0	0.0	0.0
4.63	0.0	0.0	0.0
5.63	0.0	0.0	0.0
6.63	0.002	0.020	0.756
7.63	0.009	0.182	8.080
8.63	0.022	0.470	29.886
9.63	0.035	0.730	67.914
10.63	0.045	0.943	119.765
11.63	0.051	1.053	180.503
12.63	0.051	1.040	243.192
13.63	0.047	0.983	303.437
14.63	0.038	0.846	357.238
15.63	0.023	0.463	393.521
16.63	0.013	0.238	412.795

CHAMBER NO. 1
10- 3-78

49 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 078 : EXMA/NOX(0.40)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.13												9.254	11.676
1.13	0.0	0.002	0.001	0.003				0.000	0.000			8.901	11.401
2.13	0.0	0.000	0.001	0.002	1.594			0.000	0.000			8.545	11.130
3.13	0.0	0.001	0.001	0.002	1.613			0.000	0.000			9.947	12.233
4.13	0.000	0.001	0.001	0.002	11.210			0.000	0.000			8.386	11.011
5.13	0.000	0.129	0.0	0.129	11.175	0.046	0.024	0.000	0.000			7.884	10.642
6.13	0.000	0.324	0.062	0.386	11.065	0.043	0.020	0.798	0.718	0.0	0.0	7.170	10.136
7.13	0.000	0.322	0.067	0.389	10.933	0.044	0.020	0.712	0.734		2.300	8.712	11.258
8.13	0.000	0.312	0.068	0.381	10.886	0.045	0.023	0.675	0.752	0.0		13.037	15.010
9.13	0.001	0.305	0.071	0.376	10.917	0.046	0.021	0.640	0.541		2.600	15.361	17.448
10.13	0.002	0.298	0.070	0.368	10.809	0.043	0.016	0.623	0.636	2.335		17.760	20.318
11.13	0.002	0.288	0.075	0.363	10.736	0.041	0.013	0.618	0.484			20.813	24.565
12.13	0.002	0.269	0.083	0.352	10.664	0.040	0.009	0.602	0.534	5.119	2.700	21.866	26.201
13.13	0.002	0.255	0.088	0.343	10.510	0.042	0.007	0.581	0.544		3.300	23.105	28.246
14.13	0.002	0.241	0.082	0.322	10.380	0.039	0.009	0.566	0.518	5.747			
15.13	0.002	0.252	0.088	0.319	10.234	0.037	0.007	0.493	0.493				
16.13	0.001	0.222	0.092	0.314	10.196	0.036	0.006	0.529	0.499		2.700		
17.00										3.682			

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	14.882	9.303	0.0	0.0	0.0
1.13	14.404	8.950	0.0	0.0	0.0
2.13	14.085	8.717	0.0	0.0	0.0
3.13	14.404	8.882	0.0	0.0	0.0
4.13	12.915	8.747	0.0	0.0	0.0
5.13	11.746	8.197	0.0	0.0	0.0
6.13	10.205	8.236	0.001	0.019	0.148
7.13	11.268	10.000	0.009	0.187	2.599
8.13	14.510	11.503	0.013	0.250	14.310
9.13	16.530	13.417	0.025	0.517	31.393
10.13	20.782	16.472	0.043	0.898	65.384
11.13	25.140	19.028	0.044	0.941	119.600
12.13	25.618	19.586	0.032	0.605	175.439
13.13	27.266	20.892	0.032	0.786	211.151
14.13	27.744	21.414	0.030	0.696	257.609
15.13	27.904	21.411	0.022	0.516	297.464
16.13	24.183	20.375	0.011	0.215	326.576
17.00					337.800

CHAMBER NO. 2
10- 3-78

49 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 078 : EKMA/NOX(0.40)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.30	0.0	0.001	0.001	0.002									
1.30	0.0	0.001	0.000	0.002				0.000	0.000			9.324	11.733
2.30	0.0	0.001	0.001	0.002	1.646			0.000	0.000			8.901	11.403
3.30	0.0	0.001	0.002	0.003	1.617			0.000	0.000			8.473	11.077
4.30	0.000	0.001	0.001	0.002	10.968			0.000	0.000			9.734	12.060
5.30	0.000	0.254	0.0	0.254	10.885	0.092	0.042	0.000	0.000			8.314	10.958
6.30	0.000	0.320	0.067	0.388	10.740	0.092	0.043	0.821	0.836	1.874	0.0	7.882	10.641
7.30	0.000	0.315	0.071	0.386	10.789	0.089	0.045	0.691	0.697		2.300	7.027	10.037
8.30	0.000	0.308	0.072	0.380	10.621	0.087	0.040	0.636	0.794	1.874		8.781	11.310
9.30	0.001	0.300	0.077	0.377	10.664	0.090	0.041	0.572	0.542		2.500	12.748	14.728
10.30	0.002	0.293	0.083	0.376	10.532	0.088	0.035	0.540	0.600	2.855		15.434	17.528
11.30	0.003	0.279	0.091	0.371	10.442	0.086	0.033	0.521	0.541			17.913	20.513
12.30	0.002	0.259	0.098	0.357	10.482	0.099	0.039	0.499	0.494	3.836	2.700	19.857	23.157
13.30	0.003	0.244	0.101	0.345	10.355	0.088	0.029	0.483	0.457		3.100	19.857	23.158
14.30	0.003	0.231	0.104	0.335	10.280	0.083	0.023	0.466	0.472	4.193		19.857	23.155
15.30	0.003	0.221	0.113	0.334	10.262	0.083	0.024						
16.30	0.001	0.211	0.116	0.327	10.116	0.083	0.021	0.431	0.428		2.900		
17.00										3.123			

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	12.224	9.303	0.0	0.0	0.0
1.30	12.065	8.950	0.0	0.0	0.0
2.30	11.852	8.717	0.0	0.0	0.0
3.30	12.065	8.882	0.0	0.0	0.0
4.30	11.427	8.747	0.0	0.0	0.0
5.30	10.683	8.197	0.0	0.0	0.0
6.30	9.620	8.236	0.001	0.019	0.342
7.30	12.012	10.000	0.009	0.187	4.506
8.30	14.669	11.503	0.013	0.250	16.860
9.30	17.167	13.417	0.025	0.517	36.666
10.30	22.004	16.472	0.043	0.898	74.544
11.30	25.246	19.028	0.044	0.941	129.198
12.30	25.087	19.586	0.032	0.605	179.610
13.30	27.638	20.892	0.032	0.786	219.168
14.30	27.797	21.414	0.030	0.696	264.708
15.30	27.585	21.411	0.022	0.516	303.228
16.30	23.652	20.375	0.011	0.215	326.769
17.00					337.800

CHAMBER NO. 3
10- 3-78

49 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 078 : EKMA/NOX(0.40)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
												9.042	11.511
0.47	0.0	0.001	0.001	0.003								8.549	11.133
1.47	0.0	0.001	0.002	0.003				0.000	0.000			8.260	10.917
2.47	0.0	0.001	0.002	0.003	0.708			0.000	0.000			9.238	11.664
3.47	0.0	0.001	0.001	0.002	0.664			0.000	0.000			8.172	10.852
4.47	0.000	0.001	0.001	0.002	9.070	0.163	0.076	0.000	0.000			7.599	10.437
5.47	0.000	0.237	0.031	0.269	8.958	0.185	0.088	0.000	0.000			6.884	9.939
6.47	0.000	0.322	0.065	0.388	8.934	0.211	0.102	0.734	0.708	0.0	0.210	9.626	11.973
7.47	0.000	0.314	0.070	0.384	8.917	0.211	0.103	0.673	0.654		2.300	13.250	15.220
8.47	0.000	0.302	0.077	0.379	8.828	0.211	0.094	0.656	0.752	0.0		16.101	18.292
9.47	0.001	0.289	0.087	0.376	8.811	0.204	0.091	0.632	0.542		2.600	18.994	21.950
10.47	0.003	0.267	0.103	0.370	8.738	0.208	0.081	0.627	0.617	2.506		21.377	25.431
11.47	0.004	0.238	0.127	0.365	8.612	0.200	0.068	0.621	0.689			21.948	26.354
12.47	0.003	0.208	0.146	0.354	8.654	0.200	0.063	0.603	0.630	5.639	2.700	22.276	26.861
13.47	0.005	0.182	0.155	0.337	8.553	0.195	0.057	0.545	0.611		3.300		
14.47	0.007	0.160	0.168	0.328	8.542	0.193	0.048	0.586	0.590	6.624			
15.47	0.005	0.144	0.177	0.321	8.547	0.190	0.041	0.576	0.619				
16.47	0.003	0.134	0.182	0.316	8.468	0.191	0.045	0.553	0.467		2.900		
17.00										3.491			

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	13.181	9.303	0.0	0.0	0.0
1.47	12.809	8.950	0.0	0.0	0.0
2.47	12.437	8.717	0.0	0.0	0.0
3.47	13.022	8.882	0.0	0.0	0.0
4.47	11.852	8.747	0.0	0.0	0.0
5.47	11.161	8.197	0.0	0.0	0.0
6.47	10.258	8.236	0.001	0.019	0.536
7.47	13.128	10.000	0.009	0.187	6.413
8.47	15.467	11.503	0.013	0.250	19.410
9.47	17.858	13.417	0.025	0.517	41.939
10.47	23.014	16.472	0.043	0.898	83.704
11.47	25.140	19.028	0.044	0.941	138.796
12.47	24.715	19.586	0.032	0.605	185.781
13.47	28.435	20.892	0.032	0.786	227.185
14.47	28.329	21.414	0.030	0.696	271.807
15.47	26.734	21.411	0.022	0.516	308.491
16.47	23.333	20.375	0.011	0.215	330.962
17.00					337.800

CHAMBER NO. 4
10- 3-78

49 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 078 : ERMA/NOX(0.40)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM
												9.113	11.566
0.63	0.0	0.001	0.001	0.003				0.000	0.000			8.901	11.402
1.63	0.0	0.001	0.002	0.003				0.000	0.000			8.752	11.287
2.63	0.0	0.001	0.001	0.002	1.162			0.000	0.000			9.307	11.719
3.63	0.0	0.001	0.001	0.002	1.118			0.000	0.000			7.959	10.696
4.63	0.000	0.001	0.001	0.002	10.344	0.284	0.135	0.000	0.000			7.598	10.436
5.63	0.000	0.233	0.064	0.298	10.302	0.310	0.150	0.000	0.000			6.883	9.938
6.63	0.000	0.317	0.067	0.384	10.259	0.357	0.172	0.703	0.683	0.0	0.280	10.190	12.434
7.63	0.000	0.306	0.075	0.380	10.260	0.363	0.170	0.636	0.621		1.500	13.538	15.508
8.63	0.000	0.289	0.084	0.374	10.173	0.361	0.165	0.619	0.641	0.0		16.174	18.377
9.63	0.001	0.267	0.106	0.374	10.083	0.353	0.158	0.590	0.508		2.100	18.683	21.527
10.63	0.004	0.226	0.140	0.367	10.076	0.354	0.135	0.577	0.515	2.260		19.857	23.157
11.63	0.005	0.179	0.185	0.363	9.963	0.359	0.121	0.566	0.633			19.436	23.271
12.63	0.010	0.142	0.205	0.347	9.910	0.347	0.104	0.543	0.475	5.966	2.600	19.936	23.268
13.63	0.015	0.109	0.221	0.330	9.927	0.338	0.091	0.535	0.504		2.900		
14.63	0.021	0.083	0.235	0.317	9.743	0.338	0.083	0.517	0.493	5.695			
15.63	0.021	0.066	0.245	0.312	9.718	0.328	0.073	0.501	0.535				
16.63	0.016	0.052	0.251	0.303	9.631	0.326	0.071	0.474	0.511		2.900		
17.00										2.079			

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SH L/MIN	CU-SH LANG
0.63	13.341	9.303	0.0	0.0	0.0
1.63	13.075	8.950	0.0	0.0	0.0
2.63	13.022	8.717	0.0	0.0	0.0
3.63	13.181	8.882	0.0	0.0	0.0
4.63	12.118	8.747	0.0	0.0	0.0
5.63	11.215	8.197	0.0	0.0	0.0
6.63	10.258	8.236	0.001	0.019	0.718
7.63	14.085	10.000	0.009	0.187	8.209
8.63	15.674	11.503	0.013	0.250	21.810
9.63	18.496	13.417	0.025	0.517	46.903
10.63	23.599	16.472	0.043	0.898	92.324
11.63	25.884	19.028	0.044	0.941	147.830
12.63	25.140	19.586	0.032	0.605	191.589
13.63	28.010	20.892	0.032	0.786	234.731
14.63	27.425	21.414	0.030	0.696	278.489
15.63	26.203	21.411	0.022	0.516	313.444
16.63	25.014	20.375	0.011	0.215	333.026
17.00					337.800

CHAMBER NO. 1
10- 7-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 079 : EKMA/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
0.13													2.493
1.13		0.001	0.000	0.001					0.000	0.000			1.542
2.13		0.0	0.0	0.0					0.000	0.000			1.247
3.13		0.0	0.000	0.000					0.894	0.886	0.0	0.0	0.431
4.13	0.0	0.0	0.0	0.0	1.603				0.794	0.767		0.810	1.468
5.13	0.0	0.001	0.0	0.001	10.241	0.042	0.020		0.768	0.833	0.0		7.350
6.13	0.0	0.0	0.0	0.0	10.179	0.047	0.023		0.749	0.69[illegible]		0.810	12.520
7.13	0.0	0.000	0.001	0.001	10.140	0.051	0.021		0.720	0.718	8.373		15.652
8.13	0.002	0.001	0.001	0.002	10.115	0.045	0.020		0.688	0.732		0.580	16.698
9.13	0.007	0.002	0.001	0.003	10.059	0.041	0.020		0.647	0.686	9.856		16.924
10.13	0.017	0.003	0.003	0.006	9.945	0.042	0.016		0.609	0.679		0.320	17.075
11.13	0.026	0.005	0.004	0.009	9.860	0.039	0.014		0.574	0.560	14.653	0.410	17.000
12.13	0.035	0.004	0.004	0.008	9.736	0.041	0.010		0.535	0.515			16.548
13.13	0.044	0.005	0.005	0.009	9.581	0.039	0.006		0.500	0.537	8.460	0.460	15.504
14.13	0.052	0.005	0.005	0.010	9.512	0.038		0.000					15.384
15.13	0.053	0.004	0.005	0.010	9.364	0.036							
16.13	0.052	0.003	0.005	0.008	9.269	0.035							
17.13													

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13		11.266	7.672	0.0	0.0	0.0
1.13		10.073	5.353	0.0	0.0	0.0
2.13		8.986	4.208	0.0	0.0	0.0
3.13	7.310	7.952	3.586	0.0	0.0	0.0
4.13	6.829	6.705	3.042	0.0	0.0	0.0
5.13	6.687	5.140	2.586	0.0	0.0	0.0
6.13	6.504	4.318	2.450	0.001	0.013	0.101
7.13	6.794	4.649	4.333	0.009	0.182	2.200
8.13	10.261	11.930	9.097	0.021	0.475	15.405
9.13	14.508	17.032	12.406	0.035	0.753	46.073
10.13	17.774	19.453	13.519	0.042	0.874	92.197
11.13	18.999	20.303	14.161	0.041	0.786	143.951
12.13	19.273	20.144	14.498	0.043	0.816	191.345
13.13	19.458	20.835	14.589	0.037	0.680	239.244
14.13	19.365	20.622	14.817	0.036	0.720	280.355
15.13	18.820	18.284	14.147	0.023	0.460	321.528
16.13	17.608	17.061	13.706	0.013	0.275	347.684
17.13						364.184

RII SMOG CHAMBER STUDY
RUN 079 : EKMA/SO2

CHAMBER NO. 2
10- 7-78

82 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30													2.420
1.30		0.000	0.000	0.001									1.762
2.30		0.0	0.001	0.001					0.000	0.000			1.321
3.30		0.0	0.0	0.0	1.528				0.000	0.000			0.506
4.30	0.0	0.000	0.0	0.000	10.618				0.877	0.813	0.0	0.0	1.173
5.30	0.0	0.000	0.000	0.001	10.602	0.090	0.044		0.774	0.729		1.100	7.632
6.30	0.0	0.000	0.000	0.001	10.534	0.090	0.045		0.746	0.731	0.0		10.809
7.30	0.0	0.000	0.001	0.002	10.517	0.088	0.044		0.713	0.698		0.580	11.164
8.30	0.003	0.001	0.001	0.003	10.417	0.086	0.039		0.682	0.643	5.724		11.164
9.30	0.011	0.004	0.002	0.006	10.369	0.082	0.035		0.648	0.657		0.460	11.164
10.30	0.025	0.003	0.002	0.005	10.384	0.089	0.034		0.610	0.588	8.190		11.164
11.30	0.038	0.003	0.004	0.007	10.287	0.081	0.026		0.576	0.576		0.210	11.093
12.30	0.048	0.003	0.005	0.007	10.242	0.083	0.025	0.000	0.542	0.583	8.278	0.320	11.022
13.30	0.059	0.002	0.006	0.008	10.119	0.077	0.018		0.510	0.530			11.022
14.30	0.069	0.003	0.005	0.008	10.097	0.079	0.010	0.000	0.483	0.532	5.900	0.410	10.809
15.30	0.071	0.002	0.007	0.009	9.951	0.077	0.009						10.597
16.30	0.070	0.003	0.007	0.009	9.858	0.073	0.009						
17.30													

TIME (EST)	H2O R-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30		9.402	7.672	0.0	0.0	0.0
1.30		7.836	5.353	0.0	0.0	0.0
2.30		6.537	4.208	0.0	0.0	0.0
3.30	7.273	5.556	3.586	0.0	0.0	0.0
4.30	6.939	5.107	3.042	0.0	0.0	0.0
5.30	6.723	4.285	2.586	0.0	0.0	0.0
6.30	6.339	3.623	2.450	0.001	0.013	0.234
7.30	6.651	5.295	4.533	0.009	0.182	4.056
8.30	10.460	13.108	9.097	0.021	0.475	20.250
9.30	12.956	18.158	12.486	0.035	0.753	53.754
10.30	13.264	20.091	13.519	0.042	0.874	101.112
11.30	13.263	20.463	14.161	0.041	0.786	151.968
12.30	13.262	22.323	14.494	0.043	0.816	199.668
13.30	13.200	21.845	14.589	0.037	0.680	246.180
14.30	13.138	21.898	14.817	0.036	0.720	287.700
15.30	13.140	18.868	14.147	0.023	0.460	326.219
16.30	12.957	16.902	13.706	0.013	0.275	350.489
17.30						366.989

CHAMBER NO. 3
10- 7-78

A2 & SUNSHINE

HII SMOG CHAMBER STUDY
RUN 079 : ERMA/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.47													1.762
1.47		0.000	0.000	0.001									1.025
2.47		0.0	0.000	0.000					0.000	0.000			0.580
3.47		0.0	0.000	0.000	0.681				0.000	0.000			0.357
4.47	0.0	0.001	0.0	0.001	10.350				0.921	0.863	0.0	0.0	2.856
5.47	0.0	0.000	0.001	0.001	10.242	0.192	0.098		0.862	0.820		0.460	8.478
6.47	0.0	0.0	0.001	0.001	10.248	0.192	0.093		0.851	0.815	0.0		11.378
7.47	0.0	0.001	0.001	0.002	10.227	0.190	0.093		0.833	0.771		0.580	11.662
8.47	0.005	0.001	0.001	0.002	10.166	0.188	0.087		0.809	0.782	3.082		11.662
9.47	0.014	0.003	0.002	0.006	10.145	0.194	0.085		0.780	0.798		0.460	11.520
10.47	0.027	0.003	0.004	0.007	10.098	0.186	0.074		0.751	0.756	6.429		11.520
11.47	0.039	0.003	0.004	0.007	10.124	0.183	0.068		0.720	0.685		0.250	11.449
12.47	0.048	0.003	0.005	0.007	9.984	0.179	0.059	0.000	0.696	0.708	6.253	0.250	11.378
13.47	0.057	0.002	0.005	0.008	9.994	0.175	0.052		0.659	0.673			11.449
14.47	0.064	0.002	0.007	0.009	9.892	0.173	0.039	0.000	0.638	0.607	5.460	0.320	
15.47	0.065	0.002	0.007	0.009	9.767	0.177	0.046	0.000					
16.47	0.063	0.002	0.007	0.009	9.739	0.168	0.041						

TIME (EST)	H2O K-PPM	CIEMP DEG C	IEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47		9.557	7.672	0.0	0.0	0.0
1.47		8.364	5.353	0.0	0.0	0.0
2.47		7.489	4.208	0.0	0.0	0.0
3.47	6.938	6.721	3.586	0.0	0.0	0.0
4.47	6.581	5.793	3.042	0.0	0.0	0.0
5.47	6.372	4.812	2.586	0.0	0.0	0.0
6.47	6.270	3.885	2.450	0.001	0.013	0.367
7.47	7.502	7.484	4.333	0.009	0.182	5.912
8.47	11.080	13.915	9.097	0.021	0.475	25.095
9.47	13.454	18.592	12.406	0.035	0.753	61.435
10.47	13.708	20.516	13.519	0.042	0.874	110.027
11.47	13.708	20.941	14.161	0.041	0.786	159.985
12.47	13.580	20.463	14.498	0.043	0.816	207.991
13.47	13.579	21.791	14.589	0.037	0.680	253.116
14.47	13.515	21.419	14.817	0.036	0.720	295.044
15.47	13.454	18.443	14.147	0.023	0.460	330.912
16.47	13.518	17.114	13.706	0.013	0.275	353.294

CHAMBER NO. 4
10- 7-78

82 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 079 : ERMA/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.63													2.055
1.63		0.0	0.000	0.000									1.173
2.63		0.0	0.001	0.001									0.655
3.63		0.0	0.000	0.000	1.081				0.000	0.000			0.282
4.63	0.0	0.000	0.0	0.000	10.510	0.331	0.159		0.000	0.000			3.651
5.63	0.0	0.000	0.000	0.001	10.508	0.334	0.163		0.000	0.000			9.324
6.63	0.0	0.000	0.000	0.001	10.428	0.370	0.180		0.870	0.824	0.0	0.0	11.805
7.63	0.0	0.001	0.001	0.002	10.356	0.362	0.173		0.419	0.804		0.460	11.876
8.63	0.006	0.002	0.001	0.003	10.556	0.364	0.171		0.805	0.731	0.0		11.876
9.63	0.018	0.003	0.003	0.005	10.334	0.360	0.165		0.781	0.716		2.400	11.876
10.63	0.032	0.003	0.004	0.007	10.237	0.360	0.156		0.752	0.686	2.216		11.876
11.63	0.042	0.003	0.004	0.007	10.236	0.350	0.137		0.718	0.675		0.460	11.876
12.63	0.053	0.003	0.005	0.008	10.081	0.341	0.118	0.000	0.678	0.750	4.166		11.876
13.63	0.062	0.003	0.006	0.008	10.011	0.341	0.116	0.000	0.650	0.631		0.250	11.876
14.63	0.066	0.002	0.007	0.009	9.910	0.336	0.100	0.000	0.616	0.630	2.748	0.210	11.734
15.63	0.066	0.002	0.007	0.009	9.826	0.335	0.099	0.000	0.581	0.639			11.734
16.63	0.062	0.002	0.008	0.010	9.743	0.327	0.082	0.000	0.551	0.537	3.545	0.320	11.662

TIME (EST)	H2O K-PPM	CIEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63		9.872	7.672	0.0	0.0	0.0
1.63		8.732	5.353	0.0	0.0	0.0
2.63		7.698	4.208	0.0	0.0	0.0
3.63	7.085	7.089	3.586	0.0	0.0	0.0
4.63	6.651	5.949	3.042	0.0	0.0	0.0
5.63	6.407	4.702	2.586	0.0	0.0	0.0
6.63	6.237	3.828	2.450	0.001	0.013	0.491
7.63	7.936	8.661	4.333	0.009	0.182	7.660
8.63	11.731	14.880	9.097	0.021	0.475	29.655
9.63	13.839	18.707	12.406	0.035	0.753	68.663
10.63	13.904	19.825	13.519	0.042	0.874	118.417
11.63	13.905	18.921	14.161	0.041	0.786	167.531
12.63	13.903	21.260	14.494	0.043	0.816	215.825
13.63	13.902	22.164	14.589	0.037	0.680	259.644
14.63	13.774	19.665	14.817	0.036	0.720	301.956
15.63	13.774	19.028	14.147	0.023	0.460	335.328
16.63	13.711	16.689	13.706	0.013	0.275	355.934

CHAMBER NO. 1
10- 8-78

99 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 080 : EKMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-BUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
													3.651
0.13	0.0	0.002	0.001	0.003									3.723
1.13	0.0	0.005	0.002	0.006									3.723
2.13	0.0	0.003	0.001	0.003									3.563
3.13	0.0				2.649								0.803
4.13	0.0				2.587								-0.355
5.13	0.0	0.001	0.001	0.001	10.638	0.042	0.016						-1.795
6.13	0.0	0.025	0.001	0.026	10.565	0.050	0.025		0.921	0.946	0.0	0.0	-1.539
7.13	0.000	0.024	0.006	0.030	10.588	0.050	0.024		0.836	0.797			5.155
8.13	0.003	0.020	0.009	0.029	10.586	0.052	0.023		0.829	0.809	4.710	0.280	11.164
9.13	0.012	0.015	0.013	0.028	10.555	0.047	0.014		0.822	0.812			13.891
10.13	0.025	0.011	0.016	0.028	10.467	0.047	0.014		0.806	0.872	11.426	0.210	15.061
11.13	0.042	0.009	0.019	0.028	10.326	0.045	0.009		0.780	0.768			15.356
12.13	0.063	0.007	0.018	0.026	10.288	0.045	0.005		0.747	0.717	19.973		15.356
13.13	0.082	0.006	0.017	0.023	10.172	0.042			0.711	0.661			15.283
14.13	0.098	0.005	0.016	0.021	10.006	0.040	0.003	0.001	0.676	0.639		0.250	15.283
14.88												0.280	
15.13	0.107	0.004	0.016	0.020	9.859	0.038			0.641	0.602	14.827	0.280	14.914
16.13	0.106	0.004	0.015	0.018	9.801	0.038	0.003	0.001	0.606	0.614			12.736
17.13	0.096	0.002	0.013	0.015	9.677	0.037		0.001	0.560	0.551			
18.00											11.862		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	7.936	8.557	4.761	0.0	0.0	0.0
1.13	7.976	8.717	4.269	0.0	0.0	0.0
2.13	7.976	8.451	4.664	0.0	0.0	0.0
3.13	7.775	8.663	3.011	0.0	0.0	0.0
4.13	6.475	6.803	1.652	0.0	0.0	0.0
5.13	5.954	4.039	1.011	0.0	0.0	0.0
6.13	5.357	2.657	0.778	0.001	0.012	0.094
7.13	5.459	3.083	2.603	0.009	0.181	2.132
8.13	8.817	10.577	7.817	0.021	0.453	15.113
9.13	13.267	15.520	10.794	0.035	0.748	44.594
10.13	15.866	17.912	12.472	0.045	0.952	91.066
11.13	17.112	19.612	13.231	0.052	1.076	149.153
12.13	17.438	21.101	13.806	0.054	1.134	214.165
13.13	17.438	20.835	14.231	0.046	0.941	280.699
14.13	17.356	20.782	14.514	0.039	0.849	336.442
14.88	17.356	20.410				374.647
15.13			14.247	0.026	0.581	385.291
16.13	16.951	18.284	14.081	0.014	0.330	418.193
17.13	14.717	14.563	12.542	0.003	0.068	435.949
18.00						439.499

CHAMBER NO. 2
10- 8-78

99 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 040 : EKMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	N-HUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30	0.0	0.002	0.001	0.002									3.435
1.30	0.0	0.005	0.002	0.007									3.723
2.30	0.0	0.004	0.001	0.004									3.651
3.30	0.0				3.283								2.784
4.30	0.0				3.164								0.431
5.30	0.0	0.026	0.0	0.026	10.374	0.085	0.045						-1.030
6.30	0.0	0.027	0.006	0.033	10.350	0.092	0.042		0.720	0.644	0.0	0.0	-2.052
7.30	0.001	0.027	0.007	0.033	10.322	0.090	0.044		0.644	0.524			-1.114
8.30	0.004	0.022	0.009	0.032	10.283	0.088	0.037		0.631	0.607	1.585	0.210	6.007
9.30	0.015	0.016	0.016	0.032	10.251	0.087	0.030		0.614	0.568			10.597
10.30	0.033	0.011	0.021	0.032	10.268	0.087	0.027		0.592	0.560	6.693	0.210	11.520
11.30	0.059	0.007	0.022	0.029	10.229	0.081	0.017		0.565	0.521			11.520
12.30	0.089	0.005	0.022	0.027	10.139	0.082	0.014		0.537	0.531	14.178		11.449
13.30	0.118	0.004	0.021	0.026	10.118	0.080	0.014	0.001	0.507	0.507			11.378
14.30	0.140	0.003	0.021	0.024	9.944	0.075	0.004	0.002	0.473	0.422		0.250	11.306
14.88												0.210	
15.30	0.152	0.003	0.020	0.023	9.823	0.072		0.001	0.443	0.475	10.568	0.210	11.164
16.30	0.151	0.003	0.019	0.021	9.796	0.072		0.001	0.417	0.416			11.164
17.30								0.001	0.369	0.321			10.668
18.00											10.215		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	7.816	7.335	4.761	0.0	0.0	0.0
1.30	7.977	7.388	4.269	0.0	0.0	0.0
2.30	7.936	7.175	4.664	0.0	0.0	0.0
3.30	7.463	6.591	3.011	0.0	0.0	0.0
4.30	6.304	4.411	1.652	0.0	0.0	0.0
5.30	5.667	3.030	1.011	0.0	0.0	0.0
6.30	5.256	1.967	0.778	0.001	0.012	0.216
7.30	5.632	3.667	2.603	0.009	0.181	3.978
8.30	9.354	11.906	7.817	0.021	0.453	19.734
9.30	12.774	16.530	10.794	0.035	0.748	52.224
10.30	13.581	19.293	12.472	0.045	0.952	100.776
11.30	13.580	20.675	13.231	0.052	1.076	160.128
12.30	13.515	22.057	13.806	0.054	1.134	225.752
13.30	13.451	22.217	14.231	0.046	0.941	290.297
14.30	13.388	21.685	14.314	0.039	0.849	345.101
14.88						374.647
15.30	13.263	20.569	14.247	0.026	0.581	391.217
16.30	13.265	17.752	14.081	0.014	0.330	421.559
17.30	12.857	13.819	12.542	0.003	0.068	436.643
18.00						439.499

CHAMBER NO. 3
10- 8-78

99 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 080 : EAMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.47	0.0	0.003	0.001	0.004									3.146
1.47	0.0	0.004	0.002	0.005									3.363
2.47	0.0	0.004	0.002	0.005									3.218
3.47	0.0				1.161								1.982
4.47	0.0	0.001	0.0	0.001	1.067								-0.355
5.47	0.0	0.026	0.006	0.033	7.344	0.190	0.091						-1.454
6.47	0.0	0.026	0.006	0.032	7.338	0.186	0.091		0.779	0.673	0.0	0.0	-2.396
7.47	0.002	0.025	0.007	0.032	7.345	0.185	0.089		0.743	0.746			0.580
8.47	0.009	0.016	0.013	0.029	7.320	0.186	0.080		0.753	0.700	1.937	0.0	7.209
9.47	0.032	0.010	0.021	0.031	7.324	0.178	0.070		0.747	0.768			11.235
10.47	0.076	0.005	0.024	0.028	7.300	0.177	0.053		0.732	0.704	9.863	0.250	11.876
11.47	0.129	0.004	0.022	0.026	7.307	0.175	0.040		0.709	0.678			11.876
12.47	0.173	0.002	0.022	0.024	7.226	0.172	0.031		0.673	0.689	16.292		11.805
13.47	0.194	0.002	0.021	0.023	7.242	0.166	0.019	0.004	0.652	0.675			11.734
14.47	0.201	0.002	0.022	0.024	7.123	0.161	0.007	0.002	0.623	0.589		0.250	11.662
14.88												0.250	
15.47	0.199	0.002	0.022	0.024	7.044	0.157	0.008		0.596	0.587	11.889	0.200	11.662
16.47	0.193	0.003	0.020	0.023	7.038	0.151		0.002	0.573	0.580			11.520
17.47								0.002					
18.00											9.599		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	7.657	7.547	4.761	0.0	0.0	0.0
1.47	7.776	7.388	4.269	0.0	0.0	0.0
2.47	7.697	7.122	4.664	0.0	0.0	0.0
3.47	7.049	6.591	3.011	0.0	0.0	0.0
4.47	5.954	4.943	1.652	0.0	0.0	0.0
5.47	5.493	3.455	1.011	0.0	0.0	0.0
6.47	5.124	2.232	0.778	0.001	0.012	0.338
7.47	6.372	6.006	2.603	0.009	0.181	5.824
8.47	10.162	12.597	7.817	0.021	0.453	24.355
9.47	13.328	17.008	10.794	0.035	0.748	59.854
10.47	13.904	19.081	12.472	0.045	0.952	110.486
11.47	13.903	20.463	13.231	0.052	1.076	171.103
12.47	13.837	22.164	13.806	0.054	1.134	237.299
13.47	13.772	22.164	14.231	0.046	0.941	299.896
14.47	13.707	21.632	14.314	0.039	0.849	353.761
14.88						374.647
15.47	13.708	20.463	14.247	0.026	0.581	397.144
16.47	13.582	17.167	14.081	0.014	0.330	424.925
17.47			12.542	0.003	0.068	437.337
18.00						439.499

RTI SMOG CHAMBER STUDY
RUN 080 : EKMA/NOX(0.05)/SO2

CHAMBER NO. 4
10- 8-78

99 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
													5.146
0.63	0.0	0.002	0.001	0.003									5.651
1.63	0.0	0.003	0.002	0.004									3.365
2.63	0.0	0.005	0.001	0.006	2.436								1.689
3.63	0.0				2.258								-0.523
4.63	0.0	0.001	0.001	0.001	2.142	0.275	0.136						-1.795
5.63	0.0	0.029	0.006	0.035	9.254	0.343	0.163						-2.482
6.63	0.0	0.028	0.007	0.034	9.214	0.362	0.175		0.787	0.763	0.0	0.0	1.468
7.63	0.003	0.023	0.011	0.034	9.222	0.364	0.167		0.755	0.717			7.844
8.63	0.020	0.011	0.022	0.033	9.279	0.360	0.163		0.755	0.760	1.595	0.0	11.805
9.63	0.078	0.005	0.027	0.032	9.202	0.356	0.135		0.740	0.780			12.520
10.63	0.163	0.003	0.026	0.029	9.237	0.348	0.095	0.001	0.710	0.678	11.080	0.280	12.520
11.63	0.212	0.002	0.020	0.022	9.157	0.338	0.063	0.002	0.673	0.677			12.449
12.63	0.223	0.002	0.026	0.027	9.128	0.335	0.050	0.004	0.641	0.582	11.257		12.377
13.63	0.223	0.002	0.025	0.027	8.997	0.330	0.038	0.005	0.607	0.636			12.234
14.63	0.221	0.002	0.024	0.027	8.932	0.325	0.031		0.576	0.531		0.250	
14.88												0.250	
15.63	0.215	0.003	0.025	0.028	8.848	0.327	0.024	0.004	0.542	0.561	8.155	0.210	12.162
16.63	0.207	0.002	0.024	0.026	8.709	0.314	0.019		0.512	0.524			12.091
17.00											6.648		
18.00													

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	7.657	7.813	4.761	0.0	0.0	0.0
1.63	7.956	7.707	4.269	0.0	0.0	0.0
2.63	7.776	7.388	4.664	0.0	0.0	0.0
3.63	6.902	6.484	3.011	0.0	0.0	0.0
4.63	5.881	4.783	1.652	0.0	0.0	0.0
5.63	5.356	3.189	1.011	0.0	0.0	0.0
6.63	5.091	2.126	0.778	0.001	0.012	0.454
7.63	6.793	7.441	2.603	0.009	0.181	7.562
8.63	10.612	13.606	7.817	0.021	0.453	28.703
9.63	13.840	17.274	10.794	0.035	0.748	67.034
10.63	14.506	19.719	12.472	0.045	0.952	119.626
11.63	14.505	20.675	13.231	0.052	1.076	181.433
12.63	14.436	22.057	13.806	0.054	1.134	248.185
13.63	14.369	21.632	14.231	0.046	0.941	308.929
14.63	14.234	21.207	14.314	0.039	0.849	361.912
14.88						374.647
15.63	14.169	18.975	14.247	0.026	0.581	402.721
16.63	14.104	16.264	14.081	0.014	0.330	428.093
17.00			12.542	0.003	0.068	435.419
18.00						439.499

CHAMBER NO. 1
10- 9-78

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 081 : EKMA/NOX(0.10)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.13	0.0	0.000	0.001	0.001									0.729
1.13	0.0	0.0	0.001	0.001									-0.355
2.13	0.0	0.000	0.001	0.001									-0.860
3.13	0.0	0.000	0.001	0.001									-1.199
4.13	0.0	0.000	0.001	0.001	7.105								-2.482
5.13	0.0	0.060	0.013	0.073	11.565	0.046	0.020						-4.227
6.13	0.0	0.081	0.022	0.103	11.513	0.052	0.023		0.969	0.824	1.744	0.0	-5.115
7.13	0.0	0.080	0.019	0.099	11.388	0.054	0.023		0.882	0.723			-4.492
8.13	0.003	0.077	0.022	0.099	11.317	0.063	0.025		0.878	0.758		0.280	
9.13	0.004	0.070	0.025	0.096	11.186	0.049	0.020		0.872	0.718	5.532		
10.13	0.008	0.060	0.033	0.093	11.111	0.049	0.017		0.867	0.779			13.095
11.13	0.011	0.053	0.038	0.091	11.178	0.048	0.010		0.857	0.704	7.850	0.750	14.767
12.13	0.017	0.043	0.043	0.087	11.066	0.059			0.835	0.726			15.578
13.13	0.022	0.036	0.042	0.078	10.932	0.046	0.007	0.000	0.817	0.650			16.248
14.13	0.026	0.028	0.052	0.080	10.804	0.044			0.800	0.741	12.385	0.810	16.623
15.13	0.029	0.023	0.053	0.077	10.682	0.045	0.008		0.769	0.669			16.248
16.13	0.025	0.016	0.057	0.073	10.624	0.039			0.739	0.638			15.652
17.13	0.016	0.008	0.062	0.069	10.419	0.042	0.005		0.697	0.610	5.408	0.690	12.305
18.13													13.674

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	6.441	7.018	2.361	0.0	0.0	0.0
1.13	5.953	6.144	1.403	0.0	0.0	0.0
2.13	5.737	5.323	0.703	0.0	0.0	0.0
3.13	5.596	5.246	0.128	0.0	0.0	0.0
4.13	5.090	3.652	-0.498	0.0	0.0	0.0
5.13	4.468	1.226	-1.142	0.0	0.0	0.0
6.13	4.177	0.182	-1.397	0.001	0.010	0.078
7.13	4.379	0.797	0.747	0.008	0.217	2.293
8.13		8.557	5.864	0.021	0.533	17.777
9.13		14.191	9.428	0.035	0.749	51.442
10.13	15.065	17.380	10.861	0.045	0.956	97.997
11.13	16.791	18.709	12.106	0.051	1.065	156.207
12.13	17.689	19.984	13.294	0.052	1.089	220.294
13.13	18.462	21.154	13.764	0.047	1.007	284.994
14.13	18.907	21.207	14.431	0.036	0.784	343.675
15.13	18.462	20.569	14.208	0.024	0.559	388.959
16.13	17.774	18.868	14.006	0.012	0.302	420.494
17.13	14.307	14.244	12.044	0.003	0.034	436.524
18.13	15.647	13.819				438.564

CHAMBER NO. 2
10- 9-78

97 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 081 : EKMA/NOX(0.10)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-BUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30	0.0	0.001	0.001	0.002									0.431
1.30	0.0	0.000	0.002	0.002									-0.439
2.30	0.0	0.000	0.0	0.000									-1.454
3.30	0.0	0.000	0.001	0.001									-1.454
4.30	0.0	0.000	0.001	0.001	12.676								-2.742
5.30	0.0	0.060	0.013	0.073	12.479	0.092	0.044						-4.404
6.30	0.0	0.083	0.019	0.103	12.301	0.089	0.042		0.875	0.741	0.0	0.0	-5.115
7.30	0.001	0.082	0.018	0.100	12.362	0.094	0.053		0.789	0.699			-3.787
8.30	0.003	0.075	0.024	0.099	12.209	0.083	0.035		0.773	0.690		0.320	
9.30	0.006	0.069	0.029	0.098	12.075	0.091	0.038		0.755	0.840	4.605		
10.30	0.009	0.059	0.038	0.097	12.129	0.087	0.034		0.722	0.624			12.520
11.30	0.018	0.045	0.048	0.093	12.141	0.090	0.042		0.700	0.598	7.750	0.810	13.456
12.30	0.028	0.034	0.056	0.091	12.110	0.086	0.023		0.670	0.632			13.819
13.30	0.039	0.024	0.063	0.087	12.049	0.087	0.017		0.647	0.523			13.746
14.30	0.051	0.019	0.063	0.083	12.001	0.084	0.016	0.000	0.629	0.602	11.536	0.900	13.674
15.30	0.055	0.013	0.065	0.078	11.862	0.082	0.010		0.599	0.533			13.674
16.30	0.053	0.008	0.067	0.075	11.742	0.078	0.010		0.571	0.536			13.529
17.30	0.044	0.002	0.064	0.066	11.063	0.073	0.008		0.460	0.371	4.844	0.810	10.880
18.30													13.023

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	6.304	4.418	2.361	0.0	0.0	0.0
1.30	5.918	3.597	1.403	0.0	0.0	0.0
2.30	5.493	2.776	0.703	0.0	0.0	0.0
3.30	5.493	2.753	0.128	0.0	0.0	0.0
4.30	4.994	1.467	-0.498	0.0	0.0	0.0
5.30	4.409	0.051	-1.142	0.0	0.0	0.0
6.30	4.178	-0.461	-1.397	0.001	0.010	0.180
7.30	4.618	1.329	0.747	0.008	0.217	4.506
8.30		9.833	5.864	0.021	0.533	23.214
9.30		15.254	9.428	0.035	0.749	59.082
10.30	14.507	18.602	10.861	0.045	0.956	107.748
11.30	15.422	19.719	12.106	0.051	1.065	167.070
12.30	15.789	21.154	13.294	0.052	1.089	231.402
13.30	15.714	21.685	13.764	0.047	1.007	295.265
14.30	15.640	21.632	14.431	0.036	0.784	351.671
15.30	15.641	20.675	14.208	0.024	0.559	394.661
16.30	15.497	18.018	14.006	0.012	0.302	423.575
17.30	13.020	13.553	12.044	0.003	0.034	436.871
18.30	14.996	14.616				438.911

CHAMBER NO. 3
10- 9-78

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 081 : EKMA/NOX(0.10)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SOL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.47	0.003	0.000	0.002	0.002									-0.271
1.47	0.002	0.0	0.002	0.002									-1.114
2.47	0.001	0.000	0.001	0.001									-1.199
3.47	0.0	0.0	0.001	0.001									-2.224
4.47	0.0	0.0	0.001	0.001	9.588								-3.437
5.47	0.0	0.048	0.012	0.059	9.452	0.183	0.089						-4.139
6.47	0.0	0.089	0.019	0.108	9.387	0.183	0.092		0.933	0.962	0.0	0.0	-5.563
7.47	0.002	0.087	0.019	0.106	9.439	0.186	0.079		0.895	0.730			-0.945
8.47	0.004	0.077	0.027	0.104	9.272	0.180	0.081		0.899	0.906		0.320	
9.47	0.003	0.060	0.041	0.101	9.269	0.178	0.073		0.899	0.933	4.982		
10.47	0.021	0.041	0.056	0.098	9.283	0.174	0.060		0.885	0.771			12.807
11.47	0.043	0.025	0.070	0.095	9.313	0.170	0.049		0.881	0.744	11.625	0.900	13.964
12.47	0.076	0.017	0.073	0.089	9.249	0.168	0.035	0.000	0.854	0.715			14.328
13.47	0.111	0.010	0.071	0.081	9.165	0.162	0.029	0.000	0.835	0.698			14.548
14.47	0.141	0.007	0.066	0.073	9.187	0.165	0.019	0.001	0.820	0.762	12.593	0.900	14.474
15.47	0.152	0.005	0.058	0.063	9.085	0.158	0.015		0.789	0.680			14.401
16.47	0.150	0.003	0.053	0.056	9.076	0.152	0.012		0.762	0.685			14.110
17.47	0.131	0.001	0.040	0.041	8.916	0.151	0.010	0.001	0.691	0.600	7.711	0.810	9.748

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	5.990	4.742	2.361	0.0	0.0	0.0
1.47	5.632	4.134	1.403	0.0	0.0	0.0
2.47	5.597	3.366	0.703	0.0	0.0	0.0
3.47	5.189	3.396	0.128	0.0	0.0	0.0
4.47	4.741	1.939	-0.498	0.0	0.0	0.0
5.47	4.498	0.630	-1.142	0.0	0.0	0.0
6.47	4.037	-0.255	-1.397	0.001	0.010	0.282
7.47	5.702	4.039	0.747	0.008	0.217	6.719
8.47		10.683	5.864	0.021	0.533	28.651
9.47		15.945	9.428	0.035	0.749	66.722
10.47	14.783	18.709	10.861	0.045	0.956	117.499
11.47	15.940	19.984	12.106	0.051	1.065	177.933
12.47	16.319	21.526	13.294	0.052	1.089	242.510
13.47	16.552	22.057	13.764	0.047	1.007	305.537
14.47	16.474	21.845	14.431	0.036	0.784	359.668
15.47	16.397	20.782	14.208	0.024	0.559	400.363
16.47	16.093	17.486	14.006	0.012	0.302	426.655
17.47	12.072	12.065	12.044	0.003	0.034	437.218

CHAMBER NO. 4
10- 9-78

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 081 : EKMA/NOX(0.10)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
0.63	0.001	0.000	0.001	0.001									-0.103
1.63	0.0	0.000	0.001	0.001									-1.199
2.63	0.0	0.0	0.001	0.001									-1.454
3.63	0.0	0.000	0.001	0.001									-1.881
4.63	0.0	0.000	0.001	0.001	11.411	0.360	0.173						-3.525
5.63	0.0	0.049	0.013	0.062	11.269	0.351	0.166						-3.875
6.63	0.0	0.090	0.018	0.108	11.246	0.359	0.174		0.741	0.768	0.0	0.0	-5.294
7.63	0.002	0.085	0.024	0.109	11.155	0.356	0.171		0.704	0.686			
8.63	0.006	0.067	0.039	0.106	11.113	0.354	0.157		0.704	0.715		0.280	
9.63	0.021	0.039	0.062	0.101	11.021	0.349	0.141		0.695	0.683	3.571		
10.63	0.061	0.018	0.079	0.097	11.037	0.341	0.111		0.668	0.539			13.312
11.63	0.131	0.010	0.077	0.087	11.083	0.337	0.086		0.644	0.512	10.814	0.950	14.401
12.63	0.210	0.008	0.068	0.075	10.999	0.324	0.051		0.615	0.501			15.061
13.63	0.277	0.006	0.060	0.066	10.909	0.316	0.032		0.582	0.518			15.283
14.63	0.304	0.004	0.055	0.059	10.835	0.304	0.017	0.003	0.562	0.488	17.550	0.900	15.356
15.63	0.303	0.004	0.052	0.057	10.748	0.312	0.018		0.530	0.480			15.209
16.63	0.286	0.002	0.048	0.050	10.673	0.300	0.011		0.487	0.459			13.964
17.63	0.260	0.001	0.043	0.045	10.516	0.292	0.006	0.002	0.358	0.283	10.215	0.690	8.478

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	6.064	5.225	2.361	0.0	0.0	0.0
1.63	5.597	4.351	1.403	0.0	0.0	0.0
2.63	5.493	3.690	0.703	0.0	0.0	0.0
3.63	5.322	3.772	0.128	0.0	0.0	0.0
4.63	4.710	2.093	-0.498	0.0	0.0	0.0
5.63	4.588	0.624	-1.142	0.0	0.0	0.0
6.63	4.121	-0.154	-1.397	0.001	0.010	0.378
7.63		5.209	0.747	0.008	0.217	8.803
8.63		11.268	5.864	0.021	0.533	33.767
9.63		16.317	9.428	0.035	0.749	73.912
10.63	15.278	18.602	10.861	0.045	0.956	126.677
11.63	16.398	19.772	12.106	0.051	1.065	188.157
12.63	17.111	20.728	13.294	0.052	1.089	252.964
13.63	17.355	21.791	13.764	0.047	1.007	315.204
14.63	17.438	21.207	14.431	0.036	0.784	367.195
15.63	17.274	20.197	14.208	0.024	0.559	405.729
16.63	15.943	16.636	14.006	0.012	0.302	429.554
17.63	11.081	11.215	12.044	0.003	0.034	437.544

CHAMBER NO. 1
10-10-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 082 : EKMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	PAN PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
3.13	0.0	0.026	0.006	0.032									1.321
4.13	0.0	0.026	0.006	0.032	1.817	0.004							2.274
5.13	0.0	0.056	0.011	0.068	11.016								1.836
6.13	0.0	0.056	0.012	0.067	10.894	0.386	0.180	0.889	0.795		0.0	0.0	-0.019
7.13	0.0	0.052	0.014	0.066	10.821	0.382	0.175	0.770	0.728				1.025
8.13	0.009	0.028	0.035	0.063	10.691	0.390	0.168	0.718	0.626		1.919		8.831
9.13	0.042	0.016	0.045	0.061	10.645	0.378	0.149	0.695	0.691			0.460	13.529
10.13	0.107	0.010	0.042	0.052	10.607	0.369	0.115	0.674	0.579		8.722		16.473
11.13	0.176	0.013	0.039	0.052	10.520	0.357	0.085	0.639	0.507				18.297
12.13	0.214	0.014	0.034	0.048	10.468	0.351	0.049	0.603	0.469	0.003			19.307
13.13	0.219	0.013	0.034	0.047	10.373	0.346	0.037						19.857
14.13	0.215	0.011	0.033	0.044	10.268	0.332	0.024	0.521	0.410			0.950	19.699
15.13	0.208	0.012	0.030	0.042	10.331	0.331	0.021	0.489	0.405		7.588		19.307
16.13	0.193	0.009	0.031	0.041	10.204	0.324	0.013	0.459	0.382	0.002			18.761
17.13	0.171	0.005	0.028	0.034	10.099	0.313		0.409	0.336	0.005	4.799	0.750	16.099

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
3.13			1.286	0.0	0.0	0.0
4.13	7.198	4.305	1.916	0.0	0.0	0.0
5.13	6.976	4.411	1.883	0.0	0.0	0.0
6.13	6.102	2.976	1.553	0.001	0.006	0.047
7.13	6.582	2.551	2.900	0.008	0.174	1.717
8.13	11.350	10.311	7.672	0.019	0.431	14.162
9.13	15.499	15.360	11.456	0.033	0.736	42.401
10.13	18.729	20.250	14.042	0.043	0.933	88.097
11.13	21.014	22.429	15.800	0.049	1.045	144.951
12.13	22.381	23.599	16.983	0.049	1.051	207.698
13.13	23.158	24.608	17.636	0.045	0.975	270.164
14.13	22.932	25.406	18.553	0.036	0.811	327.385
15.13	22.379	24.980	18.722	0.023	0.564	374.118
16.13	21.633	22.589	18.119	0.012	0.294	405.852
17.13	18.289	18.071	15.728	0.003	0.051	421.597

CHAMBER NO. 2
10-10-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 082 : EXMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-BUL PPM	SO2 PPM	PAN PPM	I-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
3.30	0.0	0.026	0.007	0.033									1.762
4.30	0.0	0.027	0.006	0.033	1.821								2.274
5.30	0.0	0.056	0.012	0.068	9.801	0.371	0.175						1.468
6.30	0.0	0.056	0.013	0.069	9.747	0.364	0.172	0.0	0.0		0.0	0.0	-0.187
7.30	0.002	0.052	0.016	0.068	9.682	0.364	0.171	0.0	0.0				0.207
8.30	0.008	0.034	0.031	0.064	9.602	0.363	0.161	0.0	0.0		0.0		6.785
9.30	0.041	0.016	0.047	0.062	9.612	0.355	0.139	0.0	0.0			0.950	12.162
10.30	0.114	0.012	0.047	0.059	9.561	0.348	0.105	0.0	0.0		0.0		16.248
11.30	0.203	0.016	0.042	0.059	9.480	0.336	0.065	0.003	0.003				18.143
12.30	0.259	0.017	0.042	0.058	9.415	0.330	0.042	0.004	0.003				19.228
13.30	0.280	0.015	0.041	0.056	9.436	0.324	0.027	0.003	0.003	0.002			19.385
14.30	0.288	0.014	0.039	0.053	9.276	0.314	0.017	0.006	0.003	0.003		1.400	19.307
15.30	0.291	0.014	0.040	0.054	9.345	0.310	0.011	0.003	0.002		0.0		18.859
16.30	0.285	0.009	0.039	0.048	9.271	0.304	0.008	0.004	0.002	0.006			18.297
17.30					8.184	0.270							

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
3.30			1.286	0.0	0.0	0.0
4.30	7.198	4.039	1.916	0.0	0.0	0.0
5.30	6.795	3.508	1.883	0.0	0.0	0.0
6.30	6.028	2.604	1.553	0.001	0.006	0.108
7.30	6.203	3.348	2.900	0.008	0.174	3.492
8.30	9.871	11.161	7.672	0.019	0.431	18.558
9.30	14.170	17.114	11.456	0.033	0.736	49.908
10.30	18.461	21.313	14.042	0.043	0.933	97.614
11.30	20.811	23.545	15.800	0.049	1.045	155.610
12.30	22.270	25.246	16.983	0.049	1.051	218.418
13.30	22.488	25.937	17.636	0.045	0.975	280.109
14.30	22.378	25.937	18.553	0.036	0.811	335.657
15.30	21.736	24.608	18.722	0.023	0.564	379.871
16.30	21.015	21.632	18.119	0.012	0.294	408.851
17.30			15.728	0.003	0.051	422.117

CHAMBER NO. 3
10-10-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 082 : EKMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	PAN PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
3.47	0.0	0.026	0.006	0.031									
4.47	0.0	0.026	0.006	0.031	4.577	0.251	0.120						1.909
5.47	0.0	0.051	0.011	0.062	9.214	0.400	0.189						2.128
6.47	0.0	0.052	0.010	0.062	9.164	0.391	0.186	0.0	0.0		0.0	0.0	1.025
7.47	0.002	0.044	0.018	0.062	9.142	0.393	0.190	0.0	0.0				-0.439
8.47	0.016	0.020	0.039	0.059	9.074	0.387	0.166	0.0	0.0		0.0		1.099
9.47	0.068	0.011	0.046	0.057	9.062	0.379	0.136	0.0	0.0			0.950	7.773
10.47	0.153	0.014	0.041	0.055	9.035	0.371	0.100	0.0	0.006		0.0		13.168
11.47	0.225	0.019	0.037	0.056	8.959	0.348	0.054	0.011	0.014				17.000
12.47	0.252	0.018	0.036	0.054	8.896	0.349	0.032	0.013	0.010	0.004			18.839
13.47	0.262	0.017	0.037	0.054	8.863	0.352	0.030	0.013	0.010	0.002			19.621
14.47	0.264	0.015	0.036	0.051	8.899	0.342	0.014	0.011	0.008	0.003		1.300	19.857
15.47	0.264	0.014	0.035	0.050	8.929	0.344	0.012	0.010	0.008	0.001	1.321		19.542
16.47	0.256	0.010	0.035	0.045	8.831	0.336	0.011	0.008	0.005	0.001			19.150
17.47	0.237	0.005	0.031	0.036	8.691	0.339		0.006	0.005	0.007	1.761	0.900	18.451
													14.037

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
3.47	7.013	4.411	1.286	0.0	0.0	0.0
4.47	7.123	4.677	1.916	0.0	0.0	0.0
5.47	6.581	3.774	1.883	0.0	0.0	0.0
6.47	5.918	2.551	1.553	0.001	0.006	0.169
7.47	6.616	5.049	2.900	0.008	0.174	5.267
8.47	10.562	12.012	7.672	0.019	0.431	22.954
9.47	15.136	18.018	11.456	0.033	0.736	57.415
10.47	19.364	21.951	14.042	0.043	0.933	107.131
11.47	21.737	23.705	15.800	0.049	1.045	166.269
12.47	22.821	24.874	16.983	0.049	1.051	229.138
13.47	23.157	25.831	17.636	0.045	0.975	290.054
14.47	22.708	25.831	18.553	0.036	0.811	343.929
15.47	22.163	24.874	18.722	0.023	0.564	385.624
16.47	21.219	21.207	18.119	0.012	0.294	411.850
17.47	16.018	16.264	15.728	0.003	0.051	422.637

CHAMBER NO. 4
10-10-78

94 % SUNSHINE

RTI SNUG CHAMBER STUDY
RUN 082 : FKMA/NOX(0.05)/SO2

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	PAN PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
3.63	0.0	0.026	0.007	0.032									1.982
4.63	0.0	0.026	0.005	0.031	11.461	0.356	0.164						2.274
5.63	0.0	0.051	0.011	0.062	11.334	0.372	0.177						0.431
6.63	0.0	0.051	0.011	0.062	11.300	0.377	0.184	0.801	0.733		0.0	0.0	-0.607
7.63	0.003	0.037	0.024	0.061	11.224	0.366	0.168	0.745	0.616				1.909
8.63	0.024	0.016	0.041	0.057	11.210	0.367	0.155	0.741	0.632		0.0		8.196
9.63	0.077	0.010	0.044	0.054	11.101	0.357	0.124	0.726				0.580	15.891
10.63	0.155	0.016	0.039	0.055	11.024	0.347	0.089	0.678	0.536		9.750		17.607
11.63	0.214	0.021	0.035	0.056	10.966	0.340	0.057	0.643		0.002			19.307
12.63	0.231	0.019	0.035	0.054	10.829	0.349	0.050	0.600	0.528				20.015
13.63	0.236	0.016	0.035	0.051	10.902	0.330	0.024	0.551	0.458				20.015
14.63	0.236	0.016	0.031	0.047	10.854	0.322	0.018	0.518	0.469			1.200	19.699
15.63	0.230	0.014	0.031	0.045	10.824	0.318	0.013	0.487	0.408	0.001	15.689		19.307
16.63	0.213	0.010	0.030	0.040	10.676	0.310	0.008	0.429	0.382	0.002			18.374
17.63	0.188	0.005	0.028	0.033	10.521	0.303	0.008	0.316	0.291	0.002	9.839	0.950	12.807

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
3.63	7.049	4.305	1.286	0.0	0.0	0.0
4.63	7.198	4.624	1.916	0.0	0.0	0.0
5.63	6.304	3.880	1.883	0.0	0.0	0.0
6.63	5.846	2.657	1.553	0.001	0.006	0.227
7.63	7.012	6.648	2.900	0.008	0.174	6.937
8.63	10.870	12.490	7.672	0.019	0.431	27.092
9.63	15.866	18.921	11.456	0.033	0.736	64.481
10.63	20.122	22.004	14.042	0.043	0.933	116.087
11.63	22.381	23.811	15.800	0.049	1.045	176.301
12.63	23.386	25.038	16.983	0.049	1.051	239.228
13.63	23.385	25.299	17.636	0.045	0.975	299.414
14.63	22.932	25.565	18.553	0.036	0.811	351.715
15.63	22.380	24.290	18.722	0.023	0.564	391.038
16.63	21.118	20.144	18.119	0.012	0.298	414.672
17.63	14.785	15.307	15.728	0.003	0.051	423.127

CHAMBER NO. 1
10-12-78

92 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 083 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-BUL PPM	H2S PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.13													
1.13													
2.13													
3.13													
4.13	0.0	0.001	0.001	0.002	1.604	0.003							0.523
5.13	0.0	0.029	0.007	0.035	10.533	0.403	0.192						3.791
6.13	0.0	0.030	0.006	0.036								0.0	3.560
7.13	0.0	0.031	0.006	0.038	10.400	0.398	0.193		0.815	1.036	0.857		3.905
8.13	0.007	0.022	0.015	0.037	10.540	0.419	0.191		0.756	0.890			8.008
9.13	0.038	0.009	0.026	0.035	10.523	0.413	0.152		0.746	0.852	2.420	0.250	9.191
10.13	0.080	0.005	0.027	0.032	10.606	0.401	0.102	0.006					9.395
11.13	0.102	0.004	0.026	0.030	10.443	0.389	0.073	0.011	0.699	0.732	4.252		9.536
12.13	0.106	0.003	0.025	0.028	10.488	0.377	0.053	0.012					9.607
13.13	0.111	0.003	0.025	0.027	10.257	0.364	0.038	0.010	0.602	0.549	6.105	0.250	9.677
14.13	0.118	0.003	0.023	0.026	10.296	0.357	0.029	0.010	0.619	0.551	3.489	0.280	9.748
15.13	0.114	0.003	0.022	0.025	10.234	0.349	0.023	0.010	0.614	0.522			9.889
16.13	0.102	0.004	0.022	0.026	10.140	0.344	0.018	0.010	0.603	0.503			9.960
17.13	0.083	0.003	0.022	0.026	10.021	0.336	0.014	0.010	0.589	0.485		0.250	10.101
18.13								0.010			3.227		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13		17.699			0.0	0.0
1.13		17.433	10.556		0.0	0.0
2.13		16.795			0.0	0.0
3.13		16.476			0.0	0.0
4.13	8.437	9.248	9.444		0.0	0.0
5.13	8.015	7.547			0.0	0.0
6.13	7.886	6.909			0.008	0.062
7.13	8.080	7.175	9.444		0.098	1.246
8.13	10.731	13.181	10.912	0.020	0.165	7.659
9.13	11.624	18.975	15.092	0.031	0.386	19.282
10.13	11.782	23.280	17.775	0.039	0.542	43.659
11.13	11.893	25.937	20.078	0.043	0.941	79.291
12.13	11.948	27.904	21.303	0.042	0.948	135.806
13.13	12.004	29.073	22.222	0.041	0.893	192.257
14.13	12.061	29.392	22.903	0.033	0.730	244.566
15.13	12.176	29.339	23.233	0.021	0.495	286.532
16.13	12.236	26.575	22.681	0.010	0.227	314.142
17.13	12.355	22.695	20.331	0.002	0.031	326.233
18.13						328.093

CHAMBER NO. 2
10-12-78

92 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 083 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	H2S PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
0.30													
1.30													
2.30													
3.30													4.449
4.30	0.0	0.001	0.000	0.001	10.554								3.789
5.30	0.0	0.061	0.015	0.075	10.447	0.049	0.026					0.0	3.630
6.30	0.0	0.068	0.014	0.082	10.442	0.160	0.076						4.333
7.30	0.0	0.069	0.014	0.083	10.330	0.156	0.073		0.790	0.996	0.0		8.005
8.30	0.0	0.067	0.015	0.082	10.568	0.167	0.075		0.731	0.863			8.272
9.30	0.005	0.059	0.022	0.081	10.598	0.165	0.057		0.731	0.839	2.378	0.200	8.478
10.30	0.009	0.047	0.029	0.075	10.604	0.159	0.039	0.000					8.478
11.30	0.014	0.031	0.039	0.071	10.527	0.150	0.020	0.000	0.686	0.671	5.201		8.549
12.30	0.026	0.020	0.040	0.060	10.542	0.137	0.009	0.002					8.549
13.30	0.038	0.012	0.039	0.051	10.427	0.125		0.003	0.589	0.399	14.002	0.250	8.549
14.30	0.057	0.008	0.034	0.043	10.451	0.115		0.004	0.589	0.341	14.355	0.250	8.690
15.30	0.062	0.005	0.032	0.037	10.349	0.108		0.004	0.577	0.266			8.690
16.30	0.059	0.003	0.031	0.033	10.270	0.108		0.005	0.561	0.232			9.042
17.30	0.043	0.003	0.029	0.033	10.205	0.105		0.005	0.542	0.194		0.250	
18.30								0.005			12.241		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30		11.959			0.0	0.0
1.30		11.321	10.556		0.0	0.0
2.30		11.055			0.0	0.0
3.30		10.417			0.0	0.0
4.30	8.394	7.441	9.444		0.0	0.0
5.30	8.014	6.325			0.0	0.0
6.30	7.925	6.059			0.008	0.144
7.30	8.326	7.707	9.444		0.098	2.247
8.30	10.729	13.553	10.912	0.020	0.165	9.342
9.30	10.922	20.197	15.092	0.031	0.386	23.220
10.30	11.074	23.917	17.775	0.039	0.542	49.188
11.30	11.072	26.894	20.078	0.043	0.941	88.890
12.30	11.124	28.435	21.303	0.042	0.948	145.476
13.30	11.124	29.817	22.222	0.041	0.893	201.366
14.30	11.124	29.817	22.903	0.033	0.730	252.012
15.30	11.231	29.286	23.233	0.021	0.495	291.581
16.30	11.232	25.990	22.681	0.010	0.227	316.457
17.30	11.506	21.738	20.331	0.002	0.031	326.549
18.30						328.409

CHAMBER NO. 3
10-12-78

92 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 083 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	H2S PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.47													
1.47													
2.47													
3.47													
4.47	0.0	0.001	0.001	0.002	9.358							4.089	8.184
5.47	0.0	0.104	0.027	0.131	9.240	0.095	0.050					3.426	7.811
6.47	0.0	0.104	0.026	0.130	9.283	0.093	0.044				0.0	3.483	7.843
7.47	0.0	0.105	0.023	0.129	9.178			0.714	0.916	0.0		5.472	9.015
8.47	0.0	0.110	0.017	0.127	9.294	0.096	0.040	0.673	0.796			9.766	12.084
9.47	0.0	0.109	0.016	0.125	9.323	0.094	0.033	0.660	0.748	2.972	0.210	10.316	12.535
10.47	0.0	0.105	0.020	0.124	9.425	0.091	0.022					10.384	12.589
11.47	0.002	0.099	0.022	0.121	9.327	0.087	0.012	0.632	0.637	3.550		10.384	12.588
12.47	0.007	0.094	0.025	0.119	9.341	0.083	0.010					10.455	12.646
13.47	0.007	0.086	0.026	0.112	9.304	0.076		0.560	0.447	6.341	0.250	10.314	12.526
14.47	0.007	0.077	0.029	0.106	9.297	0.072		0.571	0.415	8.190	0.250	10.384	12.586
15.47	0.007	0.070	0.031	0.101	9.283	0.073						10.455	12.646
16.47	0.007	0.065	0.032	0.096	9.216	0.068		0.558	0.338			10.597	12.768
17.47	0.0	0.062	0.034	0.095	9.115	0.069		0.540	0.319		0.210	10.809	12.954
18.00										9.335			

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	16.317			0.0	0.0
1.47	16.264	10.556		0.0	0.0
2.47	15.148			0.0	0.0
3.47	14.935			0.0	0.0
4.47	8.185	9.444		0.0	0.0
5.47	7.069			0.0	0.0
6.47	6.644			0.008	0.225
7.47	9.142	9.444		0.098	3.249
8.47	15.148	10.912	0.020	0.165	11.025
9.47	21.154	15.092	0.031	0.386	27.157
10.47	24.874	17.775	0.039	0.542	54.716
11.47	27.319	20.078	0.043	0.941	98.488
12.47	28.967	21.303	0.042	0.948	155.145
13.47	30.136	22.222	0.041	0.893	210.474
14.47	30.030	22.903	0.033	0.730	259.458
15.47	29.286	23.233	0.021	0.495	296.630
16.47	25.671	22.681	0.010	0.227	318.772
17.47	20.728	20.331	0.002	0.031	326.865
18.00					327.851

CHAMBER NO. 4
10-12-78

92 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 083 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	H2S PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.63													
1.63													
2.63													
3.63													4.158
4.63	0.0	0.002	0.001	0.002	10.068	0.371	0.177						3.568
5.63	0.0	0.099	0.025	0.124	9.968	0.368	0.174					0.0	3.625
6.63	0.0	0.134	0.031	0.166	10.006	0.372	0.177		0.790	0.916	0.788		5.895
7.63	0.0	0.132	0.034	0.166	10.133	0.387	0.179		0.773	0.876			9.410
8.63	0.0	0.105	0.056	0.161	10.124	0.384	0.158	0.001	0.754	0.834	2.260	0.0	9.678
9.63	0.017	0.057	0.093	0.150	10.065	0.373	0.117	0.006					9.748
10.63	0.057	0.025	0.111	0.135	10.147	0.362	0.076	0.014	0.714	0.684	6.315		9.889
11.63	0.109	0.011	0.106	0.117	10.051			0.022					9.889
12.63	0.173	0.007	0.094	0.101	10.087	0.328	0.030	0.028	0.636	0.490	10.902	0.210	9.889
13.63	0.227	0.005	0.083	0.088	9.960	0.312	0.016	0.034	0.638	0.455	9.750	0.250	9.960
14.63	0.263	0.004	0.075	0.078	10.009	0.300	0.007	0.039					10.101
15.63	0.270	0.003	0.068	0.071	9.990	0.298		0.037	0.617	0.399			10.101
16.63	0.246	0.002	0.062	0.064	9.636	0.272		0.041	0.603	0.381		0.210	10.384
17.63	0.220	0.003	0.054	0.057	9.560	0.282		0.040			6.027		
18.63													

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63		17.061			0.0	0.0
1.63		16.211	10.556		0.0	0.0
2.63		15.998			0.0	0.0
3.63		13.553			0.0	0.0
4.63	8.224	8.398	9.444		0.0	0.0
5.63	7.890	7.069			0.0	0.0
6.63	7.922	6.856			0.008	0.302
7.63	9.283	10.364	9.444		0.098	4.192
8.63	11.798	16.211	10.912	0.020	0.165	12.609
9.63	12.009	21.791	15.092	0.031	0.386	30.862
10.63	12.064	25.353	17.775	0.039	0.542	59.919
11.63	12.177	27.372	20.078	0.043	0.941	107.521
12.63	12.176	28.967	21.303	0.042	0.948	164.246
13.63	12.176	29.658	22.222	0.041	0.893	219.047
14.63	12.234	29.498	22.903	0.033	0.730	266.465
15.63	12.351	28.542	23.233	0.021	0.495	301.382
16.63	12.353	24.927	22.681	0.010	0.227	320.952
17.63	12.592	20.091	20.331	0.002	0.031	327.163
18.63						329.023

CHAMBER NO. 1
10-13-78

39 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 084 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM
0.13	0.0	0.004	0.002	0.007									
1.13	0.0	0.003	0.002	0.005									
2.13	0.0	0.003	0.002	0.005									
3.13	0.0	0.003	0.001	0.004									
4.13	0.0	0.002	0.001	0.003	3.118	0.030	0.005						
5.13	0.0	0.032	0.008	0.040	12.950	0.189	0.076						
6.13	0.0	0.044	0.008	0.052	12.915	0.197	0.082						
7.13	0.0	0.047	0.005	0.052	12.798	0.201	0.080		1.009		1.175	1.145	0.0
8.13	0.002	0.044	0.011	0.055	12.859	0.202	0.086						
9.13	0.004	0.038	0.017	0.055									
10.13	0.012	0.026	0.027	0.053									
11.13	0.028	0.018	0.031	0.049	12.659	0.192	0.031	0.001	0.832		0.882	0.495	0.0
12.13	0.047	0.010	0.032	0.042	12.498	0.179	0.015	0.002	0.810		0.788		
13.13	0.066	0.009	0.030	0.039	12.300	0.168		0.003	0.758		0.666		
14.13	0.072	0.007	0.028	0.035	12.264	0.164		0.004	0.729		0.567		
15.13	0.072	0.008	0.027	0.035	12.010	0.154		0.004					
16.13	0.060	0.007	0.026	0.033	11.863	0.149		0.004					
17.13	0.049	0.005	0.026	0.031	11.750	0.148		0.004	0.662		0.445		

TIME (EST)	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13			10.668	12.835	16.158	10.431	0.0	0.0	0.0
1.13			10.172	12.418	15.573	10.092	0.0	0.0	0.0
2.13			9.607	11.956	15.307	9.503	0.0	0.0	0.0
3.13			9.042	11.510	14.563	8.967	0.0	0.0	0.0
4.13			8.337	10.974	13.287	8.503	0.0	0.0	0.0
5.13			7.632	10.461	11.321	8.056	0.0	0.0	0.0
6.13		0.0	7.350	10.262	10.417	7.931	0.001	0.011	0.086
7.13	1.919		7.626	10.457	10.630	9.478	0.007	0.143	1.775
8.13		0.360	11.144	13.249	15.413	13.533	0.017	0.344	11.923
9.13		1.000	13.276	15.243	19.134	16.742	0.026	0.500	33.780
10.13	1.047		13.479	15.442	22.908	18.922	0.031	0.594	64.513
11.13		1.000	13.609	15.571	26.522	20.600	0.042	0.817	101.893
12.13	4.361		13.746	15.710	27.638	21.817	0.040	0.741	150.320
13.13			13.819	15.783	29.126	22.903	0.039	0.775	195.045
14.13	5.844	1.000	13.891	15.858	27.904	23.036	0.028	0.527	239.610
15.13			13.964	15.934	27.532	22.328	0.014	0.240	268.992
16.13			13.964	15.936	24.768	21.319	0.007	0.115	282.417
17.13	5.146	0.900	13.964	15.937	25.067	19.997	0.001	0.017	288.552

CHAMBER NO. 2
10-13-78

39 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 084 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM
0.30	0.0	0.004	0.002	0.006									
1.30	0.0	0.003	0.002	0.005									
2.30	0.0	0.003	0.001	0.004									
3.30	0.0	0.002	0.001	0.003									
4.30	0.0	0.001	0.001	0.002	3.759	0.007	0.009						
5.30	0.0	0.069	0.016	0.086	13.485	0.377	0.176						
6.30	0.0	0.074	0.016	0.090	13.664	0.409	0.191						
7.30	0.0	0.074	0.016	0.091	13.568	0.411	0.181		1.023		1.185	1.210	0.0
8.30	0.004	0.058	0.033	0.091	13.546	0.414	0.191		0.967		1.105		
9.30	0.021	0.029	0.058	0.087									
10.30	0.057	0.013	0.067	0.079									
11.30	0.111	0.010	0.062	0.072	13.409	0.377	0.066	0.008	0.862		0.898	0.615	0.100
12.30	0.154	0.006	0.057	0.064	13.550	0.367	0.049	0.013	0.832		0.823		
13.30	0.185	0.007	0.055	0.062	13.334	0.347	0.023	0.015	0.786		0.711		
14.30	0.185	0.006	0.052	0.058	13.314	0.348		0.016	0.761		0.647		
15.30	0.176	0.005	0.052	0.057	13.110	0.336		0.015					
16.30	0.155	0.005	0.049	0.054	12.890	0.320	0.007	0.015					
17.30	0.135	0.005	0.047	0.051	12.989	0.329		0.016	0.691		0.546		

TIME (EST)	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30			10.455	12.656	13.394	10.431	0.0	0.0	0.0
1.30			9.960	12.244	13.287	10.092	0.0	0.0	0.0
2.30			9.324	11.732	12.969	9.503	0.0	0.0	0.0
3.30			8.901	11.403	12.065	8.967	0.0	0.0	0.0
4.30			8.196	10.871	10.683	8.503	0.0	0.0	0.0
5.30			7.703	10.512	10.311	8.056	0.0	0.0	0.0
6.30		0.0	7.280	10.213	9.567	7.931	0.001	0.011	0.198
7.30	0.0		7.906	10.658	10.896	9.478	0.007	0.143	3.234
8.30		0.410	11.212	13.309	15.732	13.533	0.017	0.344	15.432
9.30		0.580	12.053	14.067	20.303	16.742	0.026	0.500	38.880
10.30	4.028		12.162	14.184	23.280	18.922	0.031	0.594	70.572
11.30		0.810	12.096	14.101	27.266	20.600	0.042	0.817	110.226
12.30	5.020		12.091	14.096	27.851	21.817	0.040	0.741	157.878
13.30			12.162	14.161	29.445	22.903	0.039	0.775	202.950
14.30	6.341	0.810	12.234	14.229	28.223	23.036	0.028	0.527	244.986
15.30			12.377	14.365	26.628	22.328	0.014	0.240	271.440
16.30			12.377	14.367	24.502	21.319	0.007	0.115	283.590
17.30	6.278	0.750	12.377	14.368	22.854	19.997	0.001	0.017	288.726

CHAMBER NO. 3
10-13-78

39 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 084 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3
0.47	0.0	0.006	0.004	0.010									
1.47	0.0	0.004	0.004	0.008									
2.47	0.0	0.003	0.002	0.006									
3.47	0.0	0.003	0.002	0.005									
4.47	0.0	0.003	0.001	0.004	1.376	0.095	0.052						
5.47	0.0	0.060	0.016	0.076	11.350	0.095	0.048						
6.47	0.0	0.060	0.015	0.074	11.457	0.080	0.038						
7.47	0.0	0.063	0.013	0.076	11.412	0.079	0.043	0.972		1.143	1.190	0.0	2.730
8.47	0.001	0.065	0.012	0.077				0.919		1.052			
9.47	0.002	0.068	0.011	0.078									0.0
10.47	0.002	0.065	0.012	0.077									
11.47	0.002	0.061	0.015	0.077	11.284	0.090	0.018	0.848		0.922	0.630	0.070	
12.47	0.003	0.056	0.018	0.074	11.369	0.079	0.005	0.834		0.852			4.667
13.47	0.003	0.051	0.022	0.072	11.269	0.082	0.006	0.793		0.727			
14.47	0.003	0.046	0.023	0.070	11.195	0.074	0.004	0.778		0.666			6.429
15.47	0.002	0.041	0.026	0.067	10.947	0.068							
16.47	0.001	0.039	0.026	0.064	10.879	0.071							
17.47								0.724		0.551			8.542

TIME (EST)	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47		10.031	12.302	14.191	10.431	0.0	0.0	0.0
1.47		9.677	12.014	13.872	10.092	0.0	0.0	0.0
2.47		8.972	11.456	13.341	9.503	0.0	0.0	0.0
3.47		8.478	11.080	12.809	8.967	0.0	0.0	0.0
4.47		7.773	10.560	14.350	8.503	0.0	0.0	0.0
5.47		7.421	10.311	10.630	8.056	0.0	0.0	0.0
6.47	0.0	7.209	10.163	10.205	7.931	0.001	0.011	0.310
7.47		8.326	10.967	12.012	9.478	0.007	0.143	4.693
8.47	0.690	12.423	14.415	17.274	13.533	0.017	0.344	18.941
9.47	0.620	12.767	14.742	21.313	16.742	0.026	0.500	43.960
10.47		12.897	14.865	24.024	18.922	0.031	0.594	76.631
11.47	0.810	12.810	14.779	27.691	20.600	0.042	0.817	116.559
12.47		12.807	14.775	28.488	21.817	0.040	0.741	165.436
13.47		12.807	14.775	28.542	22.903	0.039	0.775	210.855
14.47	0.900	12.807	14.775	28.701	23.036	0.028	0.527	250.361
15.47		13.023	14.987	26.362	22.328	0.014	0.240	273.888
16.47		12.951	14.918	24.449	21.319	0.007	0.115	284.762
17.47	0.690				19.997	0.001	0.017	286.899

CHAMBER NO. 4
10-13-78

39 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 084 : EKMA/NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM
0.63	0.0	0.003	0.002	0.006									
1.63	0.0	0.002	0.002	0.005									
2.63	0.0	0.001	0.002	0.003									
3.63	0.0	0.002	0.001	0.003									
4.63	0.0	0.106	0.001	0.107	2.709	0.172	0.081						
5.63	0.0	0.150	0.028	0.178	12.904	0.186	0.078						
6.63	0.0	0.163	0.037	0.200	12.927	0.188	0.094						
7.63	0.0	0.160	0.038	0.199	12.890	0.194	0.081		1.022		1.185	1.190	0.0
8.63	0.001	0.156	0.042	0.198	12.963	0.187	0.086						
9.63	0.003	0.143	0.048	0.190									
10.63	0.003	0.122	0.063	0.185									
11.63	0.008	0.097	0.075	0.172	12.718	0.166	0.025	0.000	0.902		0.922	0.830	0.190
12.63	0.013	0.068	0.090	0.158	12.575	0.165	0.019	0.000	0.884		0.834		
13.63	0.020	0.048	0.091	0.138	12.725	0.165		0.001	0.836		0.698		
14.63	0.024	0.036	0.089	0.125				0.001	0.825	0.314	0.639		
15.63	0.017	0.022	0.093	0.115	12.353	0.137		0.001					
16.63	0.012	0.017	0.094	0.111	12.190	0.141		0.001	0.786	0.333	0.573		
17.67													

TIME (EST)	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63			10.172	12.419	14.404	10.431	0.0	0.0	0.0
1.63			9.748	12.071	13.872	10.092	0.0	0.0	0.0
2.63			9.113	11.566	13.500	9.503	0.0	0.0	0.0
3.63			8.831	11.348	12.969	8.967	0.0	0.0	0.0
4.63			7.985	10.714	14.457	8.503	0.0	0.0	0.0
5.63			7.350	10.261	10.789	8.056	0.0	0.0	0.0
6.63		0.0	7.491	10.361	10.524	7.931	0.001	0.011	0.416
7.63	1.418		8.817	11.337	13.341	9.478	0.007	0.143	6.065
8.63		0.620	11.706	13.750	17.486	13.533	0.017	0.344	22.243
9.63		0.410	11.834	13.864	22.110	16.742	0.026	0.500	48.780
10.63	0.0		11.820	13.849	24.874	18.922	0.031	0.594	82.333
11.63		0.750	11.806	13.834	27.532	20.600	0.042	0.817	126.403
12.63	4.698		11.805	13.833	27.957	21.817	0.040	0.741	172.550
13.63			11.805	13.832	28.754	22.903	0.039	0.775	218.295
14.63	8.686	0.810	11.948	13.963	28.754	23.036	0.028	0.527	255.420
15.63			12.019	14.031	25.884	22.328	0.014	0.240	276.192
16.63			12.019	14.032	24.130	21.519	0.007	0.115	285.867
17.67	5.318	0.690				19.997	0.001	0.017	289.103

CHAMBER NO. 1
10-17-78

48 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 085 : NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.13	0.0	0.000	0.001	0.001						5.510	9.039	8.610	6.642
1.13	0.0	0.001	0.001	0.002						4.941	8.688	8.504	6.022
2.13	0.0	0.002	0.001	0.002						3.723	7.976	9.514	4.947
3.13	0.0	0.001	0.000	0.001						2.274	7.197	8.717	3.261
4.13	0.000	0.028	0.007	0.036						1.173	6.651	6.006	3.100
5.13	0.000	0.038	0.007	0.046						3.218	7.698	5.421	4.136
6.13	0.000	0.037	0.006	0.043		0.985	0.0	0.0	0.0	3.074	7.620	4.730	3.900
7.13	0.000	0.038	0.005	0.043	1.703				0.0	3.218	7.698	5.262	4.942
8.13	0.000	0.041	0.001	0.042	1.709	0.930	0.0	0.0		5.439	8.994	9.248	6.950
9.13	0.000	0.044	0.0	0.044					0.780	7.421	10.310	12.224	8.647
10.13	0.000	0.045	0.000	0.045	1.698	0.830	0.0	0.0		7.914	10.662	14.725	10.450
11.13	0.000	0.046	0.0	0.046	1.717					7.985	10.713	16.317	11.264
12.13	0.000	0.045	0.0	0.045	1.695	0.725	0.030			8.196	10.868	16.317	11.219
13.13	0.0	0.045	0.001	0.046	1.697			0.0	0.210	8.126	10.817	14.882	11.058
14.13	0.000	0.045	0.000	0.046	1.682	0.635	0.035			8.196	10.869	14.882	11.158
15.13	0.000	0.044	0.000	0.045	1.673			0.0	0.200	8.327	10.966	14.350	11.242
16.13	0.000	0.044	0.001	0.045	1.658	0.595	0.040			8.303	10.949	12.597	10.369
17.13	0.000	0.043	0.001	0.044	1.660					7.857	10.623	9.939	8.958
18.13										5.226			

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	0.0	0.0	0.0
1.13	0.0	0.0	0.0
2.13	0.0	0.0	0.0
3.13	0.0	0.0	0.0
4.13	0.0	0.0	0.0
5.13	0.0	0.0	0.0
6.13	0.001	0.007	0.055
7.13	0.007	0.167	1.723
8.13	0.019	0.421	13.724
9.13	0.030	0.646	40.739
10.13	0.038	0.808	80.762
11.13	0.041	0.850	129.570
12.13	0.036	0.674	179.197
13.13	0.025	0.422	217.671
14.13	0.019	0.356	242.477
15.13	0.018	0.353	263.813
16.13	0.010	0.148	283.394
17.13	0.002	0.020	291.275
18.13			292.475

CHAMBER NO. 2
10-17-78

48 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 085 : NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.30	0.0	0.001	0.001	0.002						5.368	8.950	8.345	6.642
1.30	0.0	0.001	0.001	0.002						4.512	8.432	7.441	6.022
2.30	0.0	0.001	0.001	0.002						3.363	7.776	7.016	4.947
3.30	0.0	0.002	0.001	0.003						1.689	6.902	5.793	3.261
4.30	0.000	0.002	0.036	0.038						2.201	7.160	5.474	3.100
5.30	0.000	0.002	0.042	0.045						3.291	7.737	5.474	4.136
6.30	0.000	0.004	0.042	0.047	1.432	1.075	0.0	0.0	0.0	2.711	7.426	4.465	3.900
7.30	0.008	0.017	0.028	0.045	1.591				0.0	3.363	7.777	5.687	4.942
8.30	0.002	0.037	0.007	0.044	1.635	0.915	0.0	0.0		5.581	9.083	9.780	6.950
9.30	0.000	0.045	0.000	0.045					0.360	7.280	10.210	13.447	8.647
10.30	0.000	0.046	0.000	0.046	1.682	0.795	0.030	0.0		7.491	10.359	14.032	10.450
11.30	0.000	0.047	0.0	0.047	1.667					7.491	10.358	15.679	11.264
12.30	0.000	0.047	0.001	0.048	1.667	0.710	0.045			7.491	10.358	16.689	11.219
13.30	0.0	0.048	0.0	0.048	1.654			0.0	0.210	7.491	10.359	14.829	11.058
14.30	0.000	0.048	0.0	0.048	1.615	0.635	0.050			7.350	10.258	16.955	11.158
15.30	0.000	0.047	0.000	0.047	1.634			0.0	0.200	7.477	10.348	14.829	11.242
16.30	0.000	0.042	0.001	0.043	1.616	0.620	0.060			7.453	10.333	12.862	10.369
17.30	0.000	0.047	0.0	0.047	1.609			0.0	0.0	7.147	10.120	9.567	8.958
18.30										4.727			

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	0.0	0.0	0.0
1.30	0.0	0.0	0.0
2.30	0.0	0.0	0.0
3.30	0.0	0.0	0.0
4.30	0.0	0.0	0.0
5.30	0.0	0.0	0.0
6.30	0.001	0.007	0.126
7.30	0.007	0.167	3.426
8.30	0.019	0.421	18.018
9.30	0.030	0.646	47.328
10.30	0.038	0.808	89.004
11.30	0.041	0.850	138.240
12.30	0.036	0.674	186.072
13.30	0.025	0.422	221.976
14.30	0.019	0.356	246.108
15.30	0.018	0.353	267.414
16.30	0.010	0.148	284.904
17.30	0.002	0.020	291.479
18.30			292.679

CHAMBER NO. 3
10-17-78

48 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 085 : NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.47	0.0	0.002	0.002	0.003						5.297	8.906	7.707	6.642
1.47	0.0	0.001	0.001	0.002						4.083	8.181	7.282	6.022
2.47	0.0	0.002	0.001	0.002						2.856	7.502	7.122	4.947
3.47	0.0	0.002	0.001	0.003						1.173	6.651	6.006	3.261
4.47	0.000	0.112	0.027	0.139						2.055	7.086	5.315	3.100
5.47	0.000	0.162	0.038	0.200						3.001	7.580	5.156	4.136
6.47	0.000	0.161	0.035	0.197	0.745	1.065	0.0	0.0	0.0	2.639	7.388	4.252	3.900
7.47	0.001	0.163	0.033	0.196	0.744				0.0	3.579	7.896	6.059	4.942
8.47	0.001	0.176	0.017	0.193	0.757	0.910	0.0	0.0		5.794	9.218	10.098	6.950
9.47	0.000	0.188	0.004	0.192					0.360	7.209	10.161	13.660	8.647
10.47	0.000	0.191	0.001	0.192	0.751	0.775	0.040	0.0		7.421	10.308	15.413	10.450
11.47	0.000	0.191	0.0	0.191						7.421	10.308	16.317	11.264
12.47	0.000	0.192	0.0	0.192	0.757	0.695	0.050			7.421	10.308	16.104	11.219
13.47	0.0	0.190	0.0	0.190	0.756			0.0	0.0	7.421	10.309	14.776	11.058
14.47	0.000	0.189	0.000	0.190	0.750	0.630	0.060			7.280	10.209	15.360	11.158
15.47	0.000	0.184	0.001	0.185	0.738			0.0	0.200	7.402	10.295	15.626	11.242
16.47	0.000	0.184	0.000	0.185		0.640	0.080			7.378	10.280	12.224	10.369
17.47	0.000	0.181	0.002	0.184	0.746			0.0	0.210	7.002	10.020	8.876	8.958

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	0.0	0.0	0.0
1.47	0.0	0.0	0.0
2.47	0.0	0.0	0.0
3.47	0.0	0.0	0.0
4.47	0.0	0.0	0.0
5.47	0.0	0.0	0.0
6.47	0.001	0.007	0.197
7.47	0.007	0.167	5.129
8.47	0.019	0.421	22.312
9.47	0.030	0.646	53.917
10.47	0.038	0.808	97.246
11.47	0.041	0.850	146.910
12.47	0.036	0.674	192.947
13.47	0.025	0.422	226.280
14.47	0.019	0.356	249.739
15.47	0.018	0.353	271.014
16.47	0.010	0.148	286.413
17.47	0.002	0.020	291.684

CHAMBER NO. 4
10-17-78

48 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 085 : NOX(VAR.)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.63	0.0	0.002	0.000	0.002						5.083	8.775	8.026	6.642
1.63	0.0	0.002	0.001	0.002						3.723	7.976	7.654	6.022
2.63	0.0	0.002	0.001	0.003						2.711	7.425	7.388	4.947
3.63	0.0	0.001	0.001	0.002						1.099	6.616	6.112	3.261
4.63	0.000	0.004	0.123	0.127						2.274	7.198	5.421	3.100
5.63	0.000	0.004	0.141	0.145						3.146	7.658	5.528	4.136
6.63	0.009	0.013	0.129	0.143	1.228	1.090	0.0	0.0	0.0	2.639	7.388	4.624	3.900
7.63	0.015	0.039	0.099	0.138	1.230				0.210	4.226	8.264	7.282	4.942
8.63	0.007	0.077	0.052	0.129	1.238	0.880	0.030	0.0		6.220	9.494	10.630	6.950
9.63	0.002	0.111	0.016	0.126	1.239				0.410	7.632	10.459	14.191	8.647
10.63	0.000	0.124	0.003	0.127	1.229	0.715	0.090	0.0		7.562	10.409	14.723	10.450
11.63	0.000	0.126	0.001	0.127						7.632	10.459	15.573	11.264
12.63	0.000	0.127	0.0	0.127	1.226	0.620	0.100			7.632	10.458	15.786	11.219
13.63	0.0	0.126	0.001	0.127	1.228			1.624	0.0	7.562	10.409	14.669	11.058
14.63	0.000	0.124	0.001	0.125	1.205	0.560	0.100			7.562	10.409	14.404	11.158
15.63	0.000	0.121	0.003	0.125	1.191			2.334	0.0	7.610	10.443	14.829	11.242
16.63	0.000	0.122	0.001	0.123	1.194	0.575	0.130			7.586	10.428	11.799	10.369
17.63	0.000	0.120	0.001	0.121	1.199			0.0	0.0	6.786	9.873	8.504	8.958

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	0.0	0.0	0.0
1.63	0.0	0.0	0.0
2.63	0.0	0.0	0.0
3.63	0.0	0.0	0.0
4.63	0.0	0.0	0.0
5.63	0.0	0.0	0.0
6.63	0.001	0.007	0.265
7.63	0.007	0.167	6.733
8.63	0.019	0.421	26.354
9.63	0.030	0.646	60.119
10.63	0.038	0.808	105.002
11.63	0.041	0.850	155.070
12.63	0.036	0.674	199.417
13.63	0.025	0.422	230.331
14.63	0.019	0.356	253.157
15.63	0.018	0.353	274.403
16.63	0.010	0.148	287.834
17.63	0.002	0.020	291.875

CHAMBER NO. 1
10-18-78

83 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 086 : EKMA/NOX(0.10)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
0.13	0.0	0.000	0.002	0.002							1.025	6.580	7.175
1.13	0.0	0.000	0.001	0.002									6.697
2.13	0.0	0.001	0.002	0.002	1.726								6.325
3.13	0.001	0.001	0.000	0.001	1.708						-1.122	5.628	4.890
4.13	0.001	0.059	0.016	0.074	11.021	0.091	0.041				-2.421	5.114	2.539
5.13	0.001	0.077	0.017	0.094	10.921	0.102	0.046						1.222
6.13	0.001	0.075	0.018	0.094	10.839	0.094	0.042		0.0	0.0			0.850
7.13	0.001	0.074	0.019	0.093	10.823	0.092	0.044			0.0	-3.515	4.714	0.638
8.13	0.004	0.070	0.021	0.091	10.844	0.089	0.035				2.274	7.197	7.388
9.13	0.009	0.057	0.032	0.089	10.770	0.089	0.029		0.0		8.196	10.870	15.594
10.13	0.018	0.043	0.043	0.087	10.721	0.091	0.026	0.000		0.460	11.022	13.141	17.167
10.83										0.750	11.449	13.517	19.081
11.13	0.033	0.029	0.052	0.081	10.635	0.086	0.016	0.000	0.0				
12.13	0.049	0.021	0.052	0.073	10.411	0.083	0.011	0.001		0.900	11.378	13.452	20.463
13.13	0.066	0.014	0.051	0.065	10.264	0.085		0.001	0.0		11.378	13.452	21.101
14.13	0.079	0.010	0.050	0.060	10.194	0.074		0.001		0.810	11.306	13.388	21.579
15.13	0.088	0.007	0.048	0.056	10.019	0.072		0.002	0.0		11.378	13.452	21.260
16.13	0.087	0.005	0.048	0.052	9.862	0.073	0.004	0.002		0.750	11.306	13.390	18.868
17.13	0.077	0.002	0.047	0.049	9.592	0.070		0.002	0.0		10.880	13.020	14.191

TIME (EST)	TEMP DEG C	DV L/MIN	SR L/MIN	CU-SR LANG
0.13	1.956	0.0	0.0	0.0
1.13	1.922	0.0	0.0	0.0
2.13	0.908	0.0	0.0	0.0
3.13	0.144	0.0	0.0	0.0
4.13	-0.439	0.0	0.0	0.0
5.13	-0.758	0.0	0.0	0.0
6.13	-0.981	0.001	0.009	0.070
7.13	0.242	0.007	0.171	1.874
8.13	4.803	0.018	0.426	14.123
9.13	9.314	0.031	0.687	41.719
10.13	11.369	0.041	0.871	84.374
10.83				120.956
11.13	12.567	0.046	0.980	137.484
12.13	13.253	0.046	0.990	196.362
13.13	14.475	0.042	0.916	255.185
14.13	15.061	0.032	0.740	308.771
15.13	15.347	0.021	0.518	351.409
16.13	15.089	0.010	0.248	380.142
17.13	12.883	0.002	0.028	393.098

CHAMBER NO. 2
10-18-78

AS & SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 086 : ERMA/NOX(0.10)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	H2S-M PPM	SO2-M PPM	I-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.30	0.0	0.000	0.002	0.002								0.729	6.442
1.30	0.0	0.001	0.000	0.001								0.506	6.359
2.30	0.000	0.000	0.001	0.001	1.688							-0.103	6.065
3.30	0.001	0.001	0.000	0.001	1.682							-1.295	5.558
4.30	0.001	0.058	0.012	0.070	11.186	0.087	0.044					-2.770	4.984
5.30	0.001	0.080	0.017	0.097	11.062	0.088	0.044					-3.221	4.819
6.30	0.001	0.080	0.017	0.097	10.916	0.087	0.041	0.900	0.0	0.0	0.0	-4.203	4.476
7.30	0.002	0.080	0.015	0.094	10.985	0.088	0.042				0.0	-5.303	4.175
8.30	0.002	0.084	0.011	0.095	10.894	0.087	0.040	0.780	0.0			3.218	7.696
9.30	0.003	0.087	0.009	0.096	10.881	0.085	0.033			1.690		8.619	11.185
10.30	0.002	0.089	0.011	0.100	10.861	0.084	0.027	0.780	0.030		0.580	10.597	12.773
10.83											0.690		
11.30	0.002	0.085	0.013	0.098	10.766	0.082	0.017	0.665	0.060	1.601		10.668	12.832
12.30	0.002	0.082	0.014	0.096	10.623	0.080	0.012	0.620	0.100		0.900	10.668	12.832
13.30	0.003	0.078	0.016	0.094	10.530	0.076	0.009			0.0		10.668	12.831
14.30	0.002	0.074	0.016	0.090	10.564	0.072	0.003	0.515	0.165		0.810	10.668	12.831
15.30	0.002	0.072	0.017	0.089	10.523	0.070	0.006			4.268		10.668	12.832
16.30	0.002	0.070	0.018	0.088	10.300	0.068		0.470	0.235		0.690	10.668	12.834
17.30	0.0	0.067	0.020	0.087	10.040	0.069	0.003			4.268		9.607	11.957

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SH L/MIN	CU-SH LANG
0.30	4.252	1.956	0.0	0.0	0.0
1.30	3.933	1.922	0.0	0.0	0.0
2.30	3.242	0.908	0.0	0.0	0.0
3.30	1.967	0.144	0.0	0.0	0.0
4.30	0.797	-0.459	0.0	0.0	0.0
5.30	0.159	-0.758	0.0	0.0	0.0
6.30	-0.519	-0.981	0.001	0.009	0.162
7.30	0.744	0.242	0.007	0.171	5.618
8.30	8.663	4.803	0.018	0.426	18.468
9.30	14.829	9.319	0.031	0.687	48.726
10.30	18.709	11.369	0.041	0.871	93.258
10.83					120.956
11.30	20.516	12.567	0.046	0.980	147.480
12.30	21.526	13.253	0.046	0.990	206.460
13.30	22.057	14.475	0.042	0.916	264.528
14.30	22.429	15.061	0.032	0.740	316.320
15.30	21.313	15.347	0.021	0.514	356.652
16.30	18.230	15.089	0.010	0.248	382.681
17.30	15.022	12.883	0.002	0.028	393.383

CHAMBER NO. 5
10-18-78

83 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 086 : EKMA/NOX(0.10)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
0.47	0.0	0.004	0.003	0.007							0.729	6.441	4.783
1.47	0.0	0.002	0.002	0.004	0.845						-0.019	6.101	4.358
2.47	0.000	0.002	0.002	0.004	0.807						-0.523	5.881	3.827
3.47	0.001	0.002	0.001	0.003	10.218	0.214	0.103				-1.895	5.317	2.604
4.47	0.001	0.053	0.014	0.066	10.156	0.396	0.187				-3.294	4.792	1.382
5.47	0.001	0.088	0.017	0.105	10.084	0.397	0.189				-3.573	4.693	0.744
6.47	0.001	0.087	0.016	0.103	10.016	0.394	0.187		0.0	0.0	-4.383	4.416	0.053
7.47	0.003	0.081	0.021	0.102	9.942	0.389	0.181			0.0	-2.307	5.158	1.754
8.47	0.009	0.056	0.043	0.099	9.962	0.387	0.169				4.512	8.430	9.726
9.47	0.042	0.029	0.069	0.097	9.857	0.378	0.142	0.000	0.0		9.113	11.565	15.201
10.47	0.112	0.014	0.078	0.092	9.923	0.375	0.110	0.002		0.690	10.314	12.534	18.656
10.83										0.750			
11.47	0.201	0.007	0.071	0.079	9.863	0.367	0.073		0.0		10.314	12.532	20.782
12.47	0.279	0.004	0.065	0.069	9.749	0.355	0.046	0.013		0.950	10.314	12.532	21.738
13.47	0.329	0.003	0.061	0.064	9.738	0.346	0.024	0.022	0.0		10.314	12.531	22.270
14.47	0.346	0.002	0.060	0.062	9.723	0.340	0.015	0.013		0.900	10.314	12.531	22.376
15.47	0.346	0.002	0.060	0.062	9.562	0.336	0.013	0.024	0.0		10.314	12.532	21.207
16.47	0.333	0.002	0.056	0.058	9.504	0.325		0.023		0.750	10.314	12.534	17.593
17.47								0.017	0.0				

TIME (EST)	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	1.956	0.0	0.0	0.0
1.47	1.922	0.0	0.0	0.0
2.47	0.908	0.0	0.0	0.0
3.47	0.144	0.0	0.0	0.0
4.47	-0.439	0.0	0.0	0.0
5.47	-0.758	0.0	0.0	0.0
6.47	-0.981	0.001	0.009	0.254
7.47	0.242	0.007	0.171	5.362
8.47	4.803	0.018	0.426	22.813
9.47	9.319	0.031	0.687	55.733
10.47	11.369	0.041	0.871	102.142
10.83				120.956
11.47	12.567	0.046	0.980	157.476
12.47	13.253	0.046	0.990	216.558
13.47	14.475	0.042	0.916	273.871
14.47	15.061	0.032	0.740	323.868
15.47	15.347	0.021	0.514	361.894
16.47	15.089	0.010	0.244	385.120
17.47	12.883	0.002	0.028	393.669

CHAMBER NO. 4
10-18-78

83 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 086 : EKMA/NOX(0.10)/H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.63	0.0	0.002	0.002	0.004									1.321
1.63	0.0	0.001	0.002	0.002	1.277								0.207
2.63	0.000	0.000	0.001	0.001	1.262								-0.523
3.63	0.001	0.001	0.001	0.002	10.900								-1.300
4.63	0.001	0.048	0.011	0.059	10.702	0.376	0.181						-3.210
5.63	0.001	0.082	0.016	0.099	10.578	0.392	0.187						-3.489
6.63	0.001	0.080	0.017	0.097	10.588	0.389	0.186		0.940	0.0	0.0	0.0	-4.121
7.63	0.003	0.076	0.019	0.095	10.522	0.389	0.181					0.0	-0.944
8.63	0.008	0.055	0.038	0.093	10.429	0.384	0.163		0.850	0.0			5.581
9.63	0.031	0.029	0.061	0.090	10.433	0.377	0.129	0.001			2.233		10.101
10.63	0.075	0.015	0.067	0.082	10.473	0.367	0.086	0.003	0.725	0.090		0.580	11.093
10.83												0.690	
11.63	0.119	0.009	0.064	0.074	10.361	0.354	0.053	0.011	0.560	0.120	3.146		11.164
12.63	0.153	0.006	0.061	0.067	10.172	0.341	0.032	0.010	0.565	0.205		0.900	11.235
13.63	0.168	0.004	0.058	0.062	10.257	0.335	0.022	0.021			2.943		11.235
14.63	0.169	0.003	0.057	0.060	10.248	0.326	0.015	0.003	0.545	0.285		0.810	11.235
15.63	0.158	0.003	0.055	0.058	9.790	0.314	0.007	0.017			5.683		11.235
16.63	0.139	0.003	0.055	0.058	9.936	0.316	0.008	0.020	0.455	0.290		0.750	11.164
17.63								0.014			4.059		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	6.722	5.156	1.956	0.0	0.0	0.0
1.63	6.203	4.624	1.922	0.0	0.0	0.0
2.63	5.881	4.199	0.908	0.0	0.0	0.0
3.63	5.556	2.923	0.144	0.0	0.0	0.0
4.63	4.822	1.276	-0.439	0.0	0.0	0.0
5.63	4.723	0.744	-0.758	0.0	0.0	0.0
6.63	4.504	0.053	-0.981	0.001	0.009	0.340
7.63	5.703	3.295	0.242	0.007	0.171	7.004
8.63	9.083	10.896	4.803	0.018	0.426	26.903
9.63	12.359	16.051	9.319	0.031	0.687	62.329
10.63	13.202	18.868	11.369	0.041	0.871	110.504
10.83						120.956
11.63	13.263	20.516	12.567	0.046	0.980	166.884
12.63	13.325	21.579	13.253	0.046	0.990	226.062
13.63	13.325	22.164	14.475	0.042	0.916	282.665
14.63	13.325	22.270	15.061	0.032	0.740	330.972
15.63	13.326	20.516	15.347	0.021	0.514	366.829
16.63	13.266	16.530	15.089	0.010	0.244	387.462
17.63			12.883	0.002	0.028	393.958

CHAMBER NO. 1
10-21-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 089 : EKMA/NOX(0.05)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMEK-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
0.13	0.0	0.003	0.002	0.005									2.347
1.13	0.0	0.002	0.001	0.003									1.615
2.13	0.0	0.002	0.001	0.003									1.099
3.13	0.000	0.001	0.001	0.002									0.655
4.13	0.0	0.024	0.008	0.031	2.194								-0.439
5.13	0.0	0.039	0.010	0.049	11.941								-1.030
6.13	0.000	0.055	0.0	0.055	11.799				1.840	0.0	0.0	0.0	-1.809
7.13	0.000	0.054	0.0	0.054	11.867				1.820	0.0			-0.648
8.13	0.007	0.036	0.009	0.045	11.838				1.440	0.0	51.129		4.454
9.13	0.040	0.019	0.013	0.032	11.683								11.591
10.13	0.080	0.022	0.007	0.030	11.505				1.160	0.0			15.727
11.13	0.115	0.022	0.005	0.026	11.413	0.004						0.950	16.698
12.13	0.138	0.018	0.001	0.019	11.465				0.550	0.320	37.367		17.607
13.13	0.146	0.022	0.001	0.023	11.227			0.000					18.528
14.13	0.144	0.022	0.001	0.023	10.959			0.000	0.485	0.340		1.100	19.072
15.13	0.134	0.021	0.0	0.021	10.884			0.000			17.827		19.150
16.13	0.119	0.021	0.0	0.021	10.680			0.000	0.410	0.330		1.100	18.994
17.13	0.104	0.015	0.0	0.015	10.619			0.000			3.200		16.099

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	7.234	8.451	2.931	0.0	0.0	0.0
1.13	6.865	7.813	2.178	0.0	0.0	0.0
2.13	6.615	7.175	1.661	0.0	0.0	0.0
3.13	6.406	6.537	1.039	0.0	0.0	0.0
4.13	5.918	3.827	0.586	0.0	0.0	0.0
5.13	5.667	2.711	0.286	0.0	0.0	0.0
6.13	5.352	2.073	-0.148	0.0	0.006	0.047
7.13	5.828	2.073	1.136	0.006	0.123	1.319
8.13	8.396	9.408	6.453	0.017	0.366	10.595
9.13	13.648	15.368	10.808	0.029	0.638	34.676
10.13	17.858	20.223	14.364	0.038	0.855	74.649
11.13	18.996	23.004	16.417	0.044	0.940	126.612
12.13	20.119	24.608	17.875	0.043	0.951	183.098
13.13	21.318	25.406	18.833	0.036	0.856	239.417
14.13	22.054	25.778	19.525	0.029	0.694	289.513
15.13	22.163	24.874	19.722	0.016	0.446	329.219
16.13	21.951	22.376	19.297	0.008	0.197	354.036
17.13	18.289	18.071	16.108	0.001	0.018	364.460

CHAMBER NO. 2
10-21-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 089 : EKMA/NOX(0.05)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30	0.0	0.003	0.001	0.004									2.274
1.30	0.0	0.002	0.001	0.003									1.542
2.30	0.0	0.001	0.001	0.003									1.025
3.30	0.000	0.000	0.001	0.001									0.506
4.30	0.0	0.025	0.007	0.031	2.360	0.084	0.039						-0.439
5.30	0.0	0.045	0.011	0.055	11.586	0.093	0.042						-1.114
6.30	0.000	0.059	0.0	0.059	11.585	0.089	0.043		1.280	0.0	0.0	0.0	-1.132
7.30	0.000	0.055	0.0	0.055					1.025	0.0			-1.076
8.30	0.013	0.026	0.021	0.047	11.469	0.088	0.040		0.710	0.0	38.555		5.732
9.30	0.056	0.015	0.017	0.033	11.418	0.085	0.033						12.305
10.30	0.103	0.020	0.011	0.031	11.244	0.086	0.027		0.480	0.265			15.578
11.30	0.141	0.020	0.009	0.029	11.187	0.082	0.020					0.950	16.548
12.30	0.165	0.018	0.007	0.025	10.940	0.083	0.019	0.001	0.205	0.175	24.516		17.607
13.30	0.174	0.020	0.006	0.026	11.043	0.083	0.014	0.001					18.374
14.30	0.171	0.020	0.006	0.026	10.926	0.081	0.009	0.001	0.180	0.305		1.200	18.761
15.30	0.163	0.019	0.006	0.025	10.896	0.080	0.008	0.001			16.211		18.761
16.30	0.147	0.019	0.004	0.023	10.657	0.080	0.008	0.001	0.120	0.225		1.100	18.683
17.30	0.130	0.012	0.004	0.016	10.415	0.074	0.0	0.001			5.385		14.914

TIME (EST)	H2O K-PPM	CIEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	7.198	4.730	2.931	0.0	0.0	0.0
1.30	6.830	4.730	2.178	0.0	0.0	0.0
2.30	6.581	3.827	1.661	0.0	0.0	0.0
3.30	6.339	3.933	1.039	0.0	0.0	0.0
4.30	5.918	2.232	0.586	0.0	0.0	0.0
5.30	5.633	1.807	0.286	0.0	0.0	0.0
6.30	5.625	1.435	-0.146	0.0	0.006	0.108
7.30	5.649	2.126	1.136	0.006	0.123	2.574
8.30	9.178	10.736	6.453	0.017	0.366	14.328
9.30	14.305	17.019	10.808	0.029	0.638	41.184
10.30	17.687	21.661	14.364	0.038	0.855	83.370
11.30	18.814	24.124	16.417	0.044	0.940	136.200
12.30	20.118	25.671	17.875	0.043	0.951	192.798
13.30	21.111	26.628	18.833	0.036	0.856	248.148
14.30	21.629	26.203	19.525	0.029	0.694	296.592
15.30	21.631	24.715	19.722	0.016	0.446	333.768
16.30	21.529	21.791	19.297	0.008	0.197	356.045
17.30	16.952	17.167	16.108	0.001	0.018	364.643

CHAMBER NO. 3
10-21-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 089 : EKMA/NOX(0.05)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.47	0.0	0.004	0.004	0.008									1.689
1.47	0.0	0.003	0.002	0.006									1.025
2.47	0.0	0.003	0.002	0.005									0.580
3.47	0.000	0.002	0.002	0.004									-0.103
4.47	0.0	0.023	0.011	0.034	0.906	0.169	0.081						-1.030
5.47	0.0	0.040	0.010	0.050	9.693	0.186	0.088						-1.539
6.47	0.000	0.055	0.0	0.055	9.618	0.184	0.085		1.150	0.0	0.0	0.0	-1.733
7.47	0.001	0.050	0.0	0.050	9.723	0.184	0.087		1.110	0.0			-0.826
8.47	0.018	0.022	0.018	0.040	9.384	0.177	0.079		0.875	0.0	26.218		6.931
9.47	0.061	0.019	0.014	0.033	9.579	0.178	0.071						13.168
10.47	0.102	0.023	0.009	0.032	9.283	0.174	0.060		0.550	0.290			16.099
11.47	0.132	0.024	0.006	0.030	9.285	0.170	0.048					1.100	17.151
12.47	0.150	0.023	0.005	0.028	9.208	0.169	0.038	0.001	0.410	0.310	21.182		18.066
13.47	0.154	0.025	0.004	0.027	9.138	0.170	0.033	0.001					18.994
14.47	0.148	0.023	0.003	0.027	9.224	0.173	0.029	0.001	0.355	0.375		1.400	19.150
15.47	0.138	0.021	0.017	0.038	8.943	0.165	0.022	0.001			12.540		19.150
16.47	0.122	0.021	0.002	0.023	8.995	0.165	0.019	0.001	0.360	0.275		1.200	19.150
17.47	0.104	0.013	0.001	0.014	8.645	0.162	0.017	0.001			4.236		14.110

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	6.902	5.740	2.931	0.0	0.0	0.0
1.47	6.581	5.315	2.178	0.0	0.0	0.0
2.47	6.373	4.677	1.661	0.0	0.0	0.0
3.47	6.064	4.039	1.039	0.0	0.0	0.0
4.47	5.667	2.817	0.586	0.0	0.0	0.0
5.47	5.459	2.126	0.286	0.0	0.0	0.0
6.47	5.382	1.701	-0.148	0.0	0.006	0.169
7.47	5.752	2.976	1.136	0.006	0.123	3.829
8.47	9.970	11.749	6.453	0.017	0.366	18.061
9.47	15.136	17.554	10.808	0.029	0.638	47.692
10.47	18.286	22.036	14.364	0.038	0.855	92.091
11.47	19.548	24.339	16.417	0.044	0.940	145.788
12.47	20.708	25.778	17.875	0.043	0.951	202.498
13.47	21.946	26.362	18.833	0.036	0.856	256.879
14.47	22.161	26.256	19.525	0.029	0.694	303.670
15.47	22.163	24.874	19.722	0.016	0.446	338.317
16.47	22.167	21.154	19.297	0.008	0.197	358.055
17.47	16.094	16.211	16.108	0.001	0.018	364.827

CHAMBER NO. 4
10-21-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 089 : EKMA/NOX(0.05)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
													1.909
0.63	0.0	0.004	0.002	0.006									1.247
1.63	0.0	0.003	0.002	0.005									0.877
2.63	0.0	0.002	0.001	0.004									-0.187
3.63	0.000	0.023	0.002	0.025									-0.945
4.63	0.0	0.022	0.007	0.029	9.704	0.384	0.184						-1.454
5.63	0.0	0.040	0.009	0.048	12.145	0.374	0.186						-2.080
6.63	0.000	0.054	0.0	0.054	12.009	0.366	0.171		1.150	0.0	0.0	0.200	0.829
7.63	0.003	0.041	0.005	0.047	12.213	0.372	0.171		1.100	0.0			8.197
8.63	0.032	0.017	0.020	0.037	11.920	0.360	0.159		0.760	0.0	22.538		13.891
9.63	0.076	0.019	0.011	0.030	12.031	0.359	0.142						16.698
10.63	0.112	0.024	0.010	0.034	11.848	0.355	0.120		0.565	0.270			17.607
11.63	0.134	0.025	0.006	0.031	11.843	0.349	0.096	0.000				1.200	18.528
12.63	0.146	0.024	0.006	0.030	11.705	0.349	0.081	0.002	0.360	0.305	14.417		19.150
13.63	0.144	0.024	0.006	0.030	11.445	0.339	0.065	0.002					19.542
14.63	0.139	0.023	0.006	0.030	11.428	0.339	0.055	0.002	0.300	0.345		1.500	19.542
15.63	0.126	0.020	0.006	0.026	11.187	0.331	0.047	0.002			6.599		19.228
16.63	0.109	0.020	0.005	0.026	11.128	0.327	0.042	0.002	0.335	0.280		1.200	13.168
17.63	0.091	0.012	0.005	0.018	10.929	0.326	0.036	0.002			3.655		

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	7.012	6.006	2.951	0.0	0.0	0.0
1.63	6.687	5.209	2.178	0.0	0.0	0.0
2.63	6.511	4.624	1.661	0.0	0.0	0.0
3.63	6.027	3.880	1.039	0.0	0.0	0.0
4.63	5.703	2.870	0.586	0.0	0.0	0.0
5.63	5.493	2.126	0.286	0.0	0.0	0.0
6.63	5.245	1.807	-0.148	0.0	0.006	0.227
7.63	6.489	2.764	1.136	0.006	0.123	5.009
8.63	10.870	13.287	6.455	0.017	0.366	21.575
9.63	15.866	18.460	10.808	0.029	0.638	53.816
10.63	18.997	22.358	14.364	0.038	0.855	100.299
11.63	20.119	24.501	16.417	0.044	0.940	154.812
12.63	21.317	25.937	17.875	0.043	0.951	211.628
13.63	22.161	25.990	18.833	0.036	0.856	265.097
14.63	22.708	25.937	19.525	0.029	0.694	310.333
15.63	22.710	24.183	19.722	0.016	0.446	342.598
16.63	22.276	20.356	19.297	0.008	0.197	359.946
17.63	15.138	15.467	16.108	0.001	0.018	365.000

CHAMBER NO. 1
10-22-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 090 : EKMA/NOX(0.10)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.13	0.0	0.002	0.001	0.003									4.584
1.13	0.0	0.002	0.002	0.004									4.298
2.13	0.0	0.002	0.001	0.003									3.939
3.13	0.0	0.002	0.001	0.002	5.358	0.003							3.218
4.13	0.0	0.055	0.013	0.068	13.326								2.493
5.13	0.001	0.080	0.019	0.099	13.255	0.005							1.762
6.13	0.0	0.097	0.003	0.100	12.735	0.005			0.713	0.0	0.0	0.0	1.468
7.13	0.0	0.094	0.002	0.096	12.822				0.680	0.0			3.146
8.13	0.005	0.067	0.026	0.093	12.510	0.003			0.595	0.0	114.731	0.690	9.466
9.13	0.029	0.028	0.052	0.080	12.714								15.061
10.13	0.110	0.015	0.036	0.051	12.310	0.004			0.160	0.195	174.267	0.580	16.548
11.13	0.203	0.015	0.022	0.037	11.950	0.003							17.455
12.13	0.250	0.014	0.015	0.028					0.0	0.265	85.498	0.690	18.374
13.13	0.260	0.013	0.010	0.024	12.252			0.000					19.307
14.13	0.258	0.012	0.010	0.022	12.085			0.000	0.0	0.265		0.950	19.857
15.13	0.243	0.008	0.011	0.019				0.000			20.798		21.227
16.13	0.227	0.007	0.011	0.018	12.048	0.004		0.000	0.0	0.305			20.607
17.13	0.207	0.005	0.007	0.013	11.720			0.000			27.426	0.900	19.835
18.13													13.964
19.13													12.091

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	8.473	10.364	5.036	0.0	0.0	0.0
1.13	8.304	10.045	4.847	0.0	0.0	0.0
2.13	8.098	9.620	4.225	0.0	0.0	0.0
3.13	7.698	5.740	3.558	0.0	0.0	0.0
4.13	7.311	6.006	2.992	0.0	0.0	0.0
5.13	6.939	5.156	2.617	0.0	0.0	0.0
6.13	6.794	4.411	2.166	0.0	0.005	0.039
7.13	7.659	4.465	3.397	0.006	0.123	1.259
8.13	11.846	10.098	8.667	0.016	0.355	10.449
9.13	17.114	16.370	12.908	0.028	0.630	33.894
10.13	18.817	21.260	16.758	0.037	0.766	72.755
11.13	19.927	24.662	19.308	0.042	0.913	119.861
12.13	21.110	27.319	20.986	0.043	0.921	174.704
13.13	22.376	27.851	21.869	0.038	0.844	229.363
14.13	23.154	27.851	22.317	0.030	0.689	278.794
15.13	25.197	25.026	22.475	0.020	0.465	31[illegible].571
16.13	24.261	20.865	21.931	0.009	0.208	3[illegible].162
17.13			18.586	0.001	0.018	355.160
18.13						356.240
19.13						356.240

CHAMBER NO. 2
10-22-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 090 : EKMA/NOX(0.10)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
													4.441
0.30	0.0	0.002	0.001	0.003									4.369
1.30	0.0	0.002	0.000	0.002									3.723
2.30	0.0	0.001	0.001	0.003									3.074
3.30	0.0	0.001	0.000	0.001	3.459	0.004							2.128
4.30	0.0	0.055	0.015	0.070	13.338	0.098	0.046						1.836
5.30	0.000	0.084	0.018	0.102	13.358	0.095	0.045						1.542
6.30	0.0	0.099	0.002	0.101	13.418	0.099	0.052		0.740	0.0	0.0	0.0	2.347
7.30	0.0	0.093	0.007	0.100	13.176	0.096	0.046		0.665	0.0			8.408
8.30	0.010	0.052	0.042	0.094	12.789	0.091	0.040		0.560	0.0	81.677	0.690	13.674
9.30	0.066	0.019	0.050	0.069	12.856	0.095	0.037						16.248
10.30	0.146	0.016	0.036	0.052	12.566	0.089	0.021	0.001	0.185	0.235	115.030	0.900	17.455
11.30	0.221	0.015	0.025	0.040	12.715	0.085	0.015	0.002					18.374
12.30	0.259	0.013	0.019	0.033	12.388	0.081		0.003	0.040	0.275	64.454	1.200	19.150
13.30	0.272	0.013	0.015	0.029	12.643	0.081		0.003					20.333
14.30	0.275	0.012	0.015	0.028				0.002	0.0	0.295		1.000	20.507
15.30	0.265	0.009	0.015	0.025				0.002			18.259		20.133
16.30	0.250	0.009	0.012	0.021	12.356	0.077		0.002	0.0	0.300			18.821
17.30	0.229	0.006	0.012	0.017	12.374	0.083		0.001			39.992	0.900	13.456
18.30													12.019
19.30													

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	8.389	7.654	5.036	0.0	0.0	0.0
1.30	8.348	7.175	4.847	0.0	0.0	0.0
2.30	7.977	6.856	4.225	0.0	0.0	0.0
3.30	7.619	6.378	3.5[illegible]	0.0	0.0	0.0
4.30	7.123	4.783	2.9[illegible]2	0.0	0.0	0.0
5.30	6.976	4.305	2.617	0.0	0.0	0.0
6.30	6.831	3.827	2.166	0.0	0.005	0.090
7.30	7.236	4.571	3.397	0.006	0.123	2.514
8.30	11.028	11.587	8.667	0.016	0.355	14.070
9.30	15.643	18.071	12.908	0.028	0.630	40.320
10.30	18.460	22.642	16.758	0.037	0.766	80.568
11.30	19.925	25.937	19.308	0.042	0.913	129.174
12.30	21.109	28.329	20.986	0.043	0.921	184.098
13.30	22.158	28.595	21.869	0.038	0.844	237.972
14.30	23.846	27.957	22.317	0.030	0.689	285.822
15.30	24.108	24.599	22.475	0.020	0.463	323.094
16.30	23.562	19.746	21.931	0.009	0.208	346.283
17.30			18.586	0.001	0.018	355.344
18.30						356.423
19.30						356.423

CHAMBER NO. 3
10-22-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 090 : EKMA/NOX(0.10)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMEK-M PPM	SO2-M PPM	1-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
													3.939
0.47	0.0	0.002	0.002	0.004									3.939
1.47	0.0	0.002	0.002	0.004									3.218
2.47	0.000	0.002	0.002	0.004									2.493
3.47	0.0	0.048	0.0	0.048	1.327		0.003						1.909
4.47	0.0	0.049	0.014	0.063	11.158	0.165	0.077						1.468
5.47	0.000	0.083	0.021	0.103	11.055	0.189	0.088						1.247
6.47	0.0	0.098	0.002	0.100	11.103	0.191	0.088		0.730	0.0	0.0	0.0	3.218
7.47	0.001	0.088	0.009	0.097	10.857	0.176	0.084		0.710	0.0			10.314
8.47	0.015	0.041	0.047	0.088					0.510	0.0	76.850	0.750	15.578
9.47	0.082	0.021	0.045	0.066	10.842	0.180	0.064	0.000					16.849
10.47	0.153	0.018	0.030	0.048	10.443	0.171	0.039	0.002	0.205	0.215	87.611	1.000	17.303
11.47	0.210	0.017	0.022	0.039	10.622	0.171	0.029	0.004					18.220
12.47	0.236	0.015	0.019	0.034	10.606	0.161	0.019	0.004	0.080	0.245	67.091	1.700	19.778
13.47	0.245	0.015	0.015	0.030	10.652	0.167	0.014	0.004					21.540
14.47	0.245	0.014	0.016	0.030				0.003	0.050	0.245		1.200	20.751
15.47	0.234	0.012	0.015	0.027				0.002			19.234		20.455
16.47	0.218	0.010	0.012	0.022	10.640	0.161		0.002	0.040	0.300			17.670
17.40	0.198	0.007	0.012	0.019	10.141	0.149		0.002			40.755	0.950	13.240
18.47													11.449
19.47													

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	8.098	8.238	5.036	0.0	0.0	0.0
1.47	8.099	7.600	4.847	0.0	0.0	0.0
2.47	7.697	7.494	4.225	0.0	0.0	0.0
3.47	7.311	6.431	3.558	0.0	0.0	0.0
4.47	7.012	5.421	2.992	0.0	0.0	0.0
5.47	6.794	4.783	2.617	0.0	0.0	0.0
6.47	6.687	4.146	2.166	0.0	0.005	0.141
7.47	7.698	5.049	3.397	0.006	0.123	3.769
8.47	12.538	12.809	8.667	0.016	0.355	17.691
9.47	17.690	18.602	12.908	0.028	0.630	46.746
10.47	19.178	23.545	16.758	0.037	0.766	88.381
11.47	19.734	26.628	19.308	0.042	0.913	138.487
12.47	20.906	28.329	20.986	0.043	0.921	193.492
13.47	23.040	29.020	21.869	0.038	0.844	246.581
14.47	25.682	27.904	22.317	0.030	0.689	292.850
15.47	24.474	24.118	22.475	0.020	0.463	327.816
16.47	24.038	18.627	21.931	0.009	0.208	348.405
17.40			18.586	0.001	0.018	355.451
18.47						356.607
19.47						356.607

CHAMBER NO. 4
10-22-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 090 : EKMA/NOX(0.10)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MXER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.63	0.0	0.002	0.001	0.003									4.226
1.63	0.0	0.002	0.002	0.004									4.154
2.63	0.000	0.001	0.001	0.003									3.363
3.63	0.0	0.044	0.012	0.055	14.312	0.314	0.145						2.493
4.63	0.0	0.043	0.014	0.056	13.913	0.376	0.173						1.982
5.63	0.000	0.084	0.020	0.104	13.540	0.374	0.174						1.689
6.63	0.0	0.097	0.003	0.100	13.888	0.376	0.176		0.675	0.0	0.0	0.0	1.173
7.63	0.001	0.074	0.023	0.097	13.129	0.364	0.170		0.675	0.0			4.011
8.63	0.032	0.024	0.057	0.081	13.594	0.367	0.157		0.405	0.0	60.712	0.810	10.101
9.63	0.120	0.019	0.045	0.064	13.614	0.361	0.114	0.001					15.209
10.63	0.184	0.019	0.031	0.049				0.004	0.205	0.200	60.610	1.300	17.379
11.63	0.224	0.018	0.023	0.041	13.114	0.343	0.055	0.006					17.913
12.63	0.239	0.015	0.021	0.036	13.223	0.343	0.039	0.006	0.120	0.265	59.225	1.500	18.916
13.63	0.244	0.014	0.020	0.034	12.846	0.333	0.028	0.005					20.095
14.63	0.244	0.014	0.018	0.032				0.004	0.060	0.235		1.400	21.540
15.63	0.232	0.012	0.016	0.028	12.931	0.323	0.017	0.003			9.036		20.996
16.63	0.215	0.009	0.015	0.024	12.932	0.323		0.002	0.055	0.245			20.699
17.63					12.393	0.305		0.002			19.899	1.000	16.388
18.63													12.592
19.63													11.378

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	8.263	8.398	5.036	0.0	0.0	0.0
1.63	8.222	7.919	4.847	0.0	0.0	0.0
2.63	7.776	7.654	4.225	0.0	0.0	0.0
3.63	7.311	6.431	3.558	0.0	0.0	0.0
4.63	7.049	5.368	2.992	0.0	0.0	0.0
5.63	6.903	4.783	2.617	0.0	0.0	0.0
6.63	6.652	3.774	2.166	0.0	0.005	0.189
7.63	8.140	6.909	3.397	0.006	0.123	4.949
8.63	12.360	14.350	8.667	0.016	0.355	21.099
9.63	17.274	19.612	12.908	0.028	0.630	52.794
10.63	19.832	24.183	16.758	0.037	0.766	95.735
11.63	20.508	26.894	19.308	0.042	0.913	147.251
12.63	21.838	28.169	20.986	0.043	0.921	202.334
13.63	23.496	28.914	21.869	0.038	0.844	254.683
14.63	25.683	27.266	22.317	0.030	0.689	299.464
15.63	24.846	23.105	22.475	0.020	0.463	332.261
16.63	24.402	17.934	21.931	0.009	0.208	350.402
17.63			18.586	0.001	0.018	355.700
18.63						356.780
19.63						356.780

CHAMBER NO. 1
10-23-78

95 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 091 : EKMA/NOX(0.20)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPI DEG C
0.13	0.0	0.0	0.002	0.002	5.879	0.006							8.055
1.13	0.0	0.0	0.002	0.002	5.380	0.005							8.055
2.13	0.0	0.0	0.001	0.001									7.350
3.13	0.000	0.001	0.002	0.003	4.816	0.007							7.350
4.13	0.000	0.137	0.011	0.148	13.744	0.005							6.290
5.13	0.000	0.159	0.046	0.205	13.632	0.004							6.007
6.13	0.0	0.178	0.024	0.201	13.814	0.003			1.070	0.0	0.0	0.0	5.794
7.13	0.001	0.173	0.018	0.192	12.905	0.003							
8.13	0.003	0.142	0.053	0.195	13.643				0.950	0.0	66.507	0.750	12.162
9.13	0.014	0.085	0.096	0.181	13.578	0.004			0.575	0.205			15.801
10.13	0.133	0.015	0.111	0.126	13.724	0.010			0.200	0.300			17.989
11.13	0.366	0.006	0.043	0.049	13.660	0.007		0.000				0.900	18.761
12.13	0.415	0.004	0.021	0.025					0.0	0.315	159.755		19.778
13.13	0.408	0.006	0.012	0.019									20.652
14.13	0.393	0.005	0.016	0.021				0.000	0.0	0.265		0.950	21.054
15.13	0.374	0.005	0.020	0.025	13.257	0.003		0.000			30.854		20.974
16.13	0.354	0.005	0.018	0.023	12.866	0.005			0.0	0.270	14.056	0.750	20.733

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	10.766	12.650	7.586	0.0	0.0	0.0
1.13	10.766	12.915	7.069	0.0	0.0	0.0
2.13	10.261	12.331	6.836	0.0	0.0	0.0
3.13	10.261	11.746	6.456	0.0	0.0	0.0
4.13	9.541	9.195	6.258	0.0	0.0	0.0
5.13	9.356	8.398	5.992	0.0	0.0	0.0
6.13	9.219	8.238	5.859	0.0	0.004	0.031
7.13		8.258	7.756	0.006	0.107	1.075
8.13	14.173	13.553	11.933	0.016	0.353	9.413
9.13	17.944	18.496	15.269	0.027	0.614	32.629
10.13	20.611	23.545	18.650	0.035	0.790	70.842
11.13	21.628	26.841	21.703	0.041	0.897	119.077
12.13	23.040	29.232	23.272	0.042	0.912	173.014
13.13	24.318	30.189	24.186	0.038	0.844	227.203
14.13	24.926	30.295	24.633	0.028	0.647	276.306
15.13	24.804	29.126	24.811	0.018	0.436	313.480
16.13	24.443	26.469	23.964	0.008	0.192	337.737

CHAMBER NO. 2
10-23-78

95 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 091 : EKMA/NOX(0.20)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30	0.0	0.000	0.001	0.001	5.550	0.012							8.408
1.30	0.0	0.0	0.001	0.001	5.025	0.010							7.773
2.30	0.0	0.000	0.001	0.002									7.209
3.30	0.000	0.000	0.001	0.001	4.372	0.009							6.997
4.30	0.000	0.126	0.028	0.154	13.567	0.094	0.041						6.361
5.30	0.000	0.167	0.048	0.214	13.280	0.091	0.042						6.007
6.30	0.0	0.186	0.027	0.213	13.662	0.093	0.044		1.070	0.0	0.0	0.0	5.581
7.30	0.001	0.177	0.031	0.209	13.709	0.095	0.046						6.644
8.30	0.006	0.117	0.081	0.199	13.282	0.091	0.039		0.635	0.0	82.301	0.810	11.734
9.30	0.038	0.038	0.135	0.173	13.382	0.087	0.029		0.475	0.245			15.801
10.30	0.272	0.009	0.085	0.094	13.858	0.082	0.006	0.003	0.040	0.320			17.683
11.30	0.408	0.006	0.044	0.050								0.900	18.606
12.30	0.435	0.006	0.030	0.036					0.0	0.325	114.811		19.542
13.30	0.439	0.007	0.029	0.036	13.193	0.068							20.333
14.30	0.441	0.007	0.029	0.036	13.016	0.068		0.004	0.0	0.310		0.950	20.893
15.30	0.421	0.006	0.032	0.038	12.832	0.066		0.004			26.810		20.333
16.30	0.400	0.005	0.029	0.034	12.618	0.068		0.003	0.0	0.290	13.271	0.750	20.095

TIME (EST)	H2O K-PPM	DTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	11.029	10.152	7.586	0.0	0.0	0.0
1.30	10.563	9.726	7.069	0.0	0.0	0.0
2.30	10.163	9.354	6.836	0.0	0.0	0.0
3.30	10.017	8.982	6.456	0.0	0.0	0.0
4.30	9.588	7.707	6.258	0.0	0.0	0.0
5.30	9.357	7.760	5.992	0.0	0.0	0.0
6.30	9.085	7.228	5.839	0.0	0.004	0.072
7.30	9.777	8.504	7.736	0.006	0.107	2.166
8.30	13.777	14.616	11.933	0.016	0.353	13.014
9.30	17.943	19.506	15.269	0.027	0.614	38.892
10.30	20.216	24.449	18.650	0.035	0.790	78.900
11.30	21.418	28.223	21.703	0.041	0.897	128.226
12.30	22.703	30.455	23.272	0.042	0.912	182.316
13.30	23.842	31.358	24.186	0.038	0.844	235.812
14.30	24.681	29.711	24.633	0.028	0.647	282.906
15.30	23.844	29.605	24.811	0.018	0.436	317.927
16.30	23.499	26.362	23.964	0.008	0.192	339.695

CHAMBER NO. 3
10-23-78

95 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 091 : ERMA/NOX(0.20)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	METH-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S #-CN/CM3	DEWPT DEG C
0.47	0.0	0.000	0.003	0.003	2.613	0.009							7.914
1.47	0.0	0.000	0.003	0.003	2.118	0.009							7.350
2.47	0.0	0.001	0.002	0.002									6.715
3.47	0.000	0.001	0.003	0.004	10.164								6.503
4.47	0.000	0.124	0.029	0.152	10.513	0.181	0.088						6.149
5.47	0.000	0.159	0.042	0.201	10.172	0.172	0.080						5.723
6.47	0.0	0.178	0.022	0.200	10.424	0.180	0.084		1.070	0.0	0.0	0.0	5.439
7.47	0.001	0.163	0.031	0.195	10.412	0.177	0.081						7.280
8.47	0.008	0.101	0.087	0.188	10.441	0.175	0.078		0.565	0.0	65.581	0.950	15.601
9.47	0.070	0.023	0.125	0.148	10.236	0.167	0.052	0.000	0.410	0.235			17.227
10.47	0.281	0.010	0.075	0.086	10.659	0.161	0.009	0.007	0.065	0.305			18.574
11.47	0.376	0.007	0.047	0.054								0.950	19.228
12.47	0.400	0.007	0.036	0.044					0.0	0.320	92.525		20.413
13.47	0.406	0.009	0.032	0.040	10.088	0.145		0.007					20.974
14.47	0.402	0.007	0.033	0.040	10.133	0.141		0.005	0.0	0.310		0.950	21.216
15.47	0.390	0.007	0.034	0.041	9.994	0.137		0.005			34.231		21.054
16.47	0.369	0.006	0.031	0.037	10.009	0.141		0.004	0.0	0.300	21.691	0.620	20.815

TIME (EST)	H2O #-PPM	CTEMP DEG C	FTEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	10.664	11.055	7.586	0.0	0.0	0.0
1.47	10.262	10.577	7.069	0.0	0.0	0.0
2.47	9.823	10.524	6.836	0.0	0.0	0.0
3.47	9.681	9.673	6.456	0.0	0.0	0.0
4.47	9.448	8.663	6.258	0.0	0.0	0.0
5.47	9.174	8.345	5.992	0.0	0.0	0.0
6.47	8.995	7.494	5.859	0.0	0.004	0.113
7.47	10.213	9.089	7.736	0.006	0.107	3.257
8.47	15.572	15.307	11.933	0.016	0.353	16.615
9.47	19.646	20.569	15.269	0.027	0.614	45.155
10.47	21.113	25.246	18.650	0.035	0.790	86.958
11.47	22.267	28.595	21.703	0.041	0.897	137.375
12.47	23.961	30.614	23.272	0.042	0.912	191.618
13.47	24.802	31.358	24.186	0.038	0.844	244.421
14.47	25.173	30.721	24.633	0.028	0.647	289.505
15.47	24.927	29.658	24.811	0.018	0.436	322.375
16.47	24.564	26.043	23.964	0.008	0.192	341.654

CHAMBER NO. 4
10-23-78

95 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 091 : EKMA/NOX(0.20)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMBK-P PPM	SO2-P PPM	T-P-S UG/M3	CN-S #-CN/CM3	DEWPT DEG C
													8.055
0.63	0.0	0.001	0.003	0.004	6.031	0.062							7.821
1.63	0.0	0.000	0.003	0.003	5.591	0.044							6.927
2.63	0.000	0.002	0.002	0.004									6.644
3.63	0.000	0.001	0.003	0.004	11.954	0.368	0.166						6.290
4.63	0.000	0.105	0.026	0.131	12.518	0.419	0.188						5.865
5.63	0.000	0.165	0.047	0.209	12.346	0.410	0.187						5.297
6.63	0.0	0.183	0.025	0.208	12.116	0.408	0.181		0.985	0.0	3.147	0.0	8.126
7.63	0.001	0.152	0.051	0.202	12.458	0.413	0.177						12.807
8.63	0.006	0.067	0.119	0.186	12.149	0.401	0.160		0.480	0.0	57.158	0.900	17.000
9.63	0.158	0.016	0.120	0.136	12.236	0.391	0.104	0.003	0.380	0.260			18.761
10.63	0.326	0.010	0.072	0.082	12.473	0.387	0.059	0.013	0.100	0.300			19.699
11.63	0.380	0.009	0.054	0.063								0.950	20.652
12.63	0.394	0.009	0.043	0.053					0.0	0.330	55.128		21.296
13.63	0.399	0.009	0.038	0.048	11.964	0.362		0.009					21.377
14.63	0.391	0.008	0.040	0.048	11.997	0.350		0.006	0.0	0.300		0.900	21.135
15.63	0.377	0.007	0.038	0.045	11.894	0.353		0.005			13.401		20.813
16.63	0.355	0.006	0.034	0.040				0.005	0.0	0.290	0.0	0.690	

TIME (EST)	H2O #-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	10.767	11.268	7.586	0.0	0.0	0.0
1.63	10.311	10.843	7.069	0.0	0.0	0.0
2.63	9.968	10.577	6.836	0.0	0.0	0.0
3.63	9.776	9.567	6.456	0.0	0.0	0.0
4.63	9.541	8.929	6.258	0.0	0.0	0.0
5.63	9.265	8.345	5.992	0.0	0.0	0.0
6.63	8.907	7.494	5.839	0.0	0.004	0.151
7.63	10.821	8.451	7.736	0.006	0.107	4.285
8.63	14.785	10.211	11.933	0.016	0.353	20.003
9.63	19.365	21.260	15.269	0.027	0.614	51.049
10.63	21.630	25.831	18.650	0.035	0.790	94.542
11.63	22.928	28.967	21.703	0.041	0.897	145.987
12.63	24.317	30.508	23.272	0.042	0.912	200.374
13.63	25.298	31.093	24.186	0.038	0.844	252.523
14.63	25.825	30.455	24.633	0.028	0.647	295.716
15.63	25.852	28.595	24.811	0.016	0.436	326.560
16.63	24.568	26.203	23.964	0.008	0.192	343.497

CHAMBER NO. 1
10-25-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 092 : EKMA/NOX(0.40)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-OUT PPM	C3H6 PPM	PAN PPM	MHEN-M PPM	SO2-4 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
0.13	0.0	0.000	0.000	0.000									-0.356
1.13	0.0	0.0	0.000	0.000									-0.960
2.13	0.0	0.000	0.001	0.001									-2.685
3.13	0.0	0.001	0.001	0.002	2.236								-4.096
4.13	0.0	0.204	0.056	0.260	14.450	0.304							-5.265
5.13	0.0	0.321	0.078	0.399	14.199								-6.271
6.13	0.0	0.341	0.057	0.397	14.004				0.718	0.0	0.0	0.0	-6.557
7.13	0.0	0.333	0.058	0.391	14.249								-6.466
8.13	0.002	0.301	0.079	0.379	13.864				0.570	0.0	25.140		0.207
9.13	0.006	0.264	0.111	0.375	14.010				0.485	0.0		0.280	6.715
10.13	0.012	0.210	0.147	0.358	13.593				0.350	0.0	143.528	0.200	10.243
11.13	0.027	0.118	0.210	0.324	13.557								10.526
12.13	0.085	0.039	0.212	0.251					0.0	0.225	119.185	0.280	10.597
13.13	0.130	0.019	0.164	0.183	13.121			0.000					10.597
14.13	0.152	0.012	0.131	0.143	12.758			0.000	0.0	0.240		0.360	10.738
15.13	0.158	0.008	0.113	0.121	12.876			0.001			45.481		10.951
16.13	0.151	0.005	0.093	0.098	12.395			0.001	0.0	0.190			10.951
17.13	0.132	0.004	0.068	0.072	12.126			0.000			22.740	0.280	11.022
18.13													8.901

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	5.953	6.537	0.953	0.0	0.0	0.0
1.13	5.695	6.059	-0.147	0.0	0.0	0.0
2.13	5.014	4.518	-1.044	0.0	0.0	0.0
3.13	4.512	1.541	-1.819	0.0	0.0	0.0
4.13	4.130	-0.053	-2.383	0.0	0.0	0.0
5.13	3.825	-0.797	-2.814	0.0	0.0	0.0
6.13	3.741	-1.063	-2.794	0.0	0.005	0.039
7.13	3.768	-1.276	-1.121	0.006	0.199	1.852
8.13	6.202	5.740	3.231	0.017	0.387	15.259
9.13	9.823	11.799	7.253	0.029	0.604	40.171
10.13	12.476	16.423	11.183	0.038	0.753	77.573
11.13	12.712	19.559	14.194	0.044	0.942	124.228
12.13	12.771	22.376	16.353	0.045	0.950	180.810
13.13	12.770	23.545	18.086	0.040	0.870	237.186
14.13	12.891	24.183	18.994	0.030	0.675	287.865
15.13	13.075	23.705	18.919	0.019	0.451	326.617
16.13	13.077	20.941	18.086	0.008	0.191	351.649
17.13	13.141	17.912	15.667	0.001	0.015	361.736
18.13						362.636

CHAMBER NO. 2
10-25-76

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 092 : EKMA/NOX(0.40)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30	0.0	0.000	0.000	0.000									-0.358
1.30	0.0	0.0	0.000	0.000									-1.301
2.30	0.0	0.000	0.001	0.002									-2.947
3.30	0.0	0.219	0.0	0.219	2.198								-4.452
4.30	0.0	0.217	0.058	0.275	14.185	0.088	0.035						-5.446
5.30	0.0	0.322	0.081	0.402	13.968	0.094	0.050						-6.546
6.30	0.0	0.340	0.063	0.403	13.944	0.100	0.048		0.693	0.0	0.0	0.0	-6.557
7.30	0.0	0.328	0.066	0.394	14.174	0.093	0.043						-5.653
8.30	0.004	0.288	0.095	0.383	13.733	0.097	0.045		0.517	0.0	52.867		0.951
9.30	0.010	0.224	0.148	0.372	13.938	0.092	0.038		0.445	0.0		0.250	7.068
10.30	0.024	0.140	0.208	0.347	13.882	0.089	0.031		0.160	0.205	167.630	0.280	9.960
11.30	0.110	0.034	0.236	0.270	13.614	0.084	0.017	0.001					10.314
12.30	0.249	0.012	0.156	0.168	13.226	0.080		0.006	0.0	0.300	127.459	0.280	10.384
13.30	0.340	0.006	0.083	0.089	13.096	0.077		0.010					10.384
14.30	0.381	0.004	0.055	0.060	12.972	0.065		0.011	0.0	0.260		0.410	10.526
15.30	0.383	0.003	0.054	0.057	13.075	0.067		0.012			50.859		10.597
16.30	0.365	0.003	0.045	0.049	13.055	0.065		0.011	0.0	0.175			10.597
17.30	0.353	0.003	0.039	0.042	12.132	0.061		0.009			25.741	0.360	10.597
18.30													8.267

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	5.953	3.667	0.953	0.0	0.0	0.0
1.30	5.555	2.923	-0.147	0.0	0.0	0.0
2.30	4.918	1.594	-1.044	0.0	0.0	0.0
3.30	4.393	-0.425	-1.819	0.0	0.0	0.0
4.30	4.074	-1.116	-2.385	0.0	0.0	0.0
5.30	3.745	-1.913	-2.814	0.0	0.0	0.0
6.30	3.742	-2.232	-2.794	0.0	0.005	0.090
7.30	4.010	-1.222	-1.121	0.006	0.199	3.882
8.30	6.545	6.750	3.231	0.017	0.387	19.206
9.30	10.065	13.075	7.253	0.029	0.604	46.332
10.30	12.241	17.539	11.183	0.038	0.753	85.254
11.30	12.532	20.728	14.194	0.044	0.942	133.836
12.30	12.590	23.227	16.353	0.045	0.950	190.500
13.30	12.589	24.608	18.086	0.040	0.870	246.060
14.30	12.709	24.821	18.994	0.030	0.675	294.750
15.30	12.770	23.439	18.919	0.019	0.451	331.218
16.30	12.772	20.465	18.086	0.008	0.191	353.597
17.30	12.774	17.327	15.667	0.001	0.015	361.889
18.30						362.789

CHAMBER NO. 3
10-25-78

100 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 092 : ERNA/NOX(0.40)/CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C
													-0.613
0.47	0.0	0.000	0.000	0.000									-2.158
1.47	0.0	0.000	0.002	0.002									-3.647
2.47	0.0	0.001	0.002	0.003									-5.076
3.47	0.0	0.201	0.004	0.206	1.531	0.171	0.083						-6.080
4.47	0.0	0.204	0.058	0.262	14.006	0.172	0.080						-6.822
5.47	0.0	0.321	0.082	0.403	13.564	0.187	0.088						-7.289
6.47	0.0	0.340	0.061	0.401	13.325	0.179	0.092		0.690	0.0	0.0	0.0	-5.583
7.47	0.0	0.325	0.067	0.392	13.530	0.178	0.085						2.856
8.47	0.004	0.286	0.098	0.384	13.484	0.177	0.084		0.525	0.0	15.760		8.267
9.47	0.009	0.235	0.139	0.374	13.481	0.181	0.075		0.350	0.0		0.250	10.597
10.47	0.019	0.151	0.203	0.354	13.368	0.172	0.063		0.350	0.160	85.154	0.250	10.880
11.47	0.089	0.042	0.252	0.293	13.311	0.170	0.041	0.002					10.951
12.47	0.243	0.013	0.177	0.189	12.974	0.158	0.017	0.010	0.0	0.260	121.926	0.360	11.022
13.47	0.370	0.006	0.099	0.105	12.816	0.147	0.009	0.020					11.093
14.47	0.418	0.004	0.070	0.074	12.507	0.134		0.028	0.0	0.250		0.410	11.093
15.47	0.420	0.003	0.069	0.072	12.733	0.137		0.024			48.974		11.164
16.47	0.404	0.003	0.062	0.065	12.339	0.135		0.021	0.0	0.245			11.235
17.47	0.387	0.003	0.057	0.060	11.780	0.135		0.017			24.402	0.520	

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	5.843	3.933	0.953	0.0	0.0	0.0
1.47	5.215	2.976	-0.147	0.0	0.0	0.0
2.47	4.667	1.913	-1.044	0.0	0.0	0.0
3.47	4.190	0.159	-1.819	0.0	0.0	0.0
4.47	3.881	-0.691	-2.383	0.0	0.0	0.0
5.47	3.666	-1.435	-2.814	0.0	0.0	0.0
6.47	3.536	-2.179	-2.794	0.0	0.005	0.141
7.47	4.093	-0.850	-1.121	0.006	0.199	5.912
8.47	7.501	7.919	5.231	0.017	0.387	23.153
9.47	10.922	13.925	7.253	0.029	0.604	52.493
10.47	12.773	18.496	11.183	0.038	0.753	92.935
11.47	15.015	21.419	14.194	0.044	0.942	143.444
12.47	15.075	23.652	16.353	0.045	0.950	200.190
13.47	13.136	24.715	18.086	0.040	0.870	254.934
14.47	13.198	24.768	18.994	0.030	0.675	301.635
15.47	13.199	23.439	18.919	0.019	0.451	335.818
16.47	13.264	19.984	18.086	0.008	0.191	355.545
17.47	13.329	16.370	15.667	0.001	0.015	362.042

RTI SMOG CHAMBER STUDY
RUN 092 : EKMA/NOX(0.40)/CH3SH

CHAMBER NO. 4
10-25-78

100 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-HUI PPM	C3H6 PPM	PAN PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	LN-S K=CN/CM3	DEWPT DEG C
0.63	0.0	0.000	0.000	0.000									-0.279
1.63	0.0	0.000	0.001	0.001									-1.476
2.63	0.0	0.000	0.001	0.001									-3.300
3.63	0.0	0.171	0.046	0.217	1.803	0.375	0.178						-4.811
4.63	0.0	0.171	0.045	0.216	13.747	0.363	0.175						-5.901
5.63	0.0	0.322	0.078	0.399	13.568	0.370	0.165						-6.551
6.63	0.0	0.343	0.060	0.403	13.409	0.363	0.171		0.680	0.0	0.0	0.0	-6.466
7.63	0.0	0.315	0.078	0.392	13.415	0.359	0.171						-2.828
8.63	0.006	0.244	0.136	0.380	13.365	0.351	0.156		0.520	0.0	30.965		4.154
9.63	0.016	0.164	0.195	0.359	13.314	0.372	0.155		0.340	0.0		0.250	9.113
10.63	0.070	0.054	0.258	0.312	13.154	0.342	0.100	0.002	0.245	0.210	117.769	0.320	11.734
11.63	0.311	0.013	0.184	0.197	12.784	0.321	0.046	0.017					11.876
12.63	0.493	0.008	0.103	0.112	12.760	0.304	0.018	0.041	0.0	0.255	91.575	0.410	12.019
13.63	0.516	0.006	0.086	0.092	12.170	0.282	0.004	0.044					12.019
14.63		0.005	0.085	0.089	12.632	0.288		0.046	0.0	0.275		0.410	12.162
15.63	0.492	0.004	0.084	0.087	12.640	0.286		0.036			44.772		12.234
16.63	0.474	0.004	0.080	0.084	12.265	0.281		0.031	0.0	0.265			12.305
17.63	0.448	0.004	0.074	0.078	12.069	0.276		0.030			22.152	0.320	12.091

TIME (EST)	H2O K-PPM	CTEMP DEG C	FTEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	5.987	4.358	0.953	0.0	0.0	0.0
1.63	5.484	3.508	-0.147	0.0	0.0	0.0
2.63	4.790	2.073	-1.044	0.0	0.0	0.0
3.63	4.275	0.266	-1.819	0.0	0.0	0.0
4.63	3.954	-0.791	-2.385	0.0	0.0	0.0
5.63	3.743	-1.488	-2.818	0.0	0.0	0.0
6.63	3.768	-1.594	-2.794	0.0	0.005	0.189
7.63	4.962	1.860	-1.121	0.006	0.199	7.822
8.63	8.221	9.726	3.231	0.017	0.587	26.869
9.63	11.565	14.829	7.253	0.029	0.604	58.291
10.63	13.774	18.868	11.183	0.038	0.753	100.163
11.63	13.903	21.738	14.194	0.044	0.942	152.488
12.63	14.033	23.120	16.353	0.045	0.950	209.310
13.63	14.032	24.449	18.086	0.040	0.870	263.286
14.63	14.165	24.555	18.994	0.030	0.679	308.115
15.63	14.233	22.454	18.919	0.019	0.451	340.147
16.63	14.303	19.293	18.086	0.008	0.191	357.379
17.63	14.105	15.839	15.667	0.001	0.015	362.186

CHAMBER NO. 1
11- 2-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 095 : EKMA/NOX(VAR.)/COS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	PAN PPM	T-SUL PPM	COS PPM	COS-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
											5.366	8.948	10.471
0.13	0.0	0.002	0.0	0.002							4.850	8.632	9.992
1.13	0.0	0.001	0.001	0.002							4.259	8.282	9.514
2.13	0.0	0.001	0.001	0.001							4.026	8.148	9.035
3.13	0.0	0.001	0.001	0.002							3.146	7.657	7.707
4.13	0.0	0.001	0.002	0.003							2.566	7.349	5.368
5.13	0.0	0.029	0.008	0.038							1.982	7.049	4.730
6.13	0.0	0.037	0.008	0.045						0.0			4.518
7.13	0.000	0.037	0.008	0.045		0.940	0.946	1.000	0.0		4.727	8.559	8.557
8.13	0.002	0.033	0.011	0.044		0.942	0.946				7.068	10.063	13.553
9.13	0.006	0.027	0.018	0.044		0.940	0.944	0.990	0.0	0.0	7.350	10.257	18.018
10.13	0.014	0.021	0.021	0.042		0.938	0.950				7.562	10.405	20.835
11.13	0.024	0.017	0.025	0.042		0.939	0.946	0.990	0.0	0.0	7.562	10.404	23.120
12.13	0.035	0.011	0.027	0.038		0.936	0.937				7.703	10.505	23.811
13.13	0.046	0.009	0.027	0.036	0.000	0.926	0.932	0.965			7.632	10.454	23.599
14.13	0.055	0.006	0.027	0.034		0.932	0.935		0.0		7.703	10.505	22.801
15.13	0.059	0.005	0.027	0.032		0.928	0.930	0.955		0.0	7.773	10.557	20.356
16.13	0.059	0.002	0.031	0.033		0.919	0.925				7.773	10.560	15.859
17.13	0.055	0.001	0.030	0.031		0.891	0.903				7.632	10.460	12.278
18.13	0.048	0.001	0.028	0.029		0.873	0.887		2.251	0.0			

TIME (EST)	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	4.678	0.0	0.0	0.0
1.13	4.208	0.0	0.0	0.0
2.13	3.883	0.0	0.0	0.0
3.13	3.236	0.0	0.0	0.0
4.13	2.725	0.0	0.0	0.0
5.13	2.642	0.0	0.0	0.0
6.13	2.403	0.0	0.002	0.016
7.13	3.225	0.004	0.082	0.760
8.13	7.342	0.012	0.292	7.318
9.13	11.347	0.022	0.518	26.600
10.13	14.072	0.030	0.698	59.084
11.13	16.483	0.036	0.805	101.799
12.13	17.542	0.036	0.819	150.208
13.13	18.575	0.032	0.747	198.786
14.13	18.603	0.025	0.588	242.366
15.13	18.708	0.015	0.373	275.969
16.13	18.219	0.006	0.132	296.469
17.13	14.539	0.001	0.004	303.391
18.13	10.919	0.0	0.0	303.600

CHAMBER NO. 2
11- 2-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 095 : EKMA/NOX(VAR.)/COS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	PAN PPM	T-SUL PPM	COS PPM	COS-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
0.30	0.0	0.001	0.0	0.001							5.363	8.948	7.866
1.30	0.0	0.001	0.000	0.001							4.775	8.588	6.856
2.30	0.0	0.001	0.001	0.001							4.041	8.157	6.909
3.30	0.0	0.001	0.0	0.001							3.951	8.106	5.846
4.30	0.0	0.001	0.000	0.001							2.856	7.503	4.677
5.30	0.0	0.029	0.007	0.037							2.347	7.236	4.146
6.30	0.0	0.036	0.008	0.045						0.0	2.055	7.087	3.935
7.30	0.000	0.035	0.011	0.045		0.975	0.973	0.950	0.0		2.347	7.236	4.252
8.30	0.005	0.026	0.018	0.044		0.975	0.976				5.510	9.039	9.461
9.30	0.030	0.011	0.033	0.044		0.974	0.973	1.005	0.0	0.0	6.997	10.014	14.776
10.30	0.092	0.005	0.036	0.042		0.974	0.971				7.209	10.158	19.453
11.30	0.170	0.003	0.036	0.039		0.971	0.973	1.055	0.0	0.0	7.421	10.305	22.270
12.30	0.223	0.001	0.036	0.037		0.973	0.966				7.421	10.303	24.662
13.30	0.245	0.002	0.035	0.037		0.968	0.966	1.045			7.491	10.353	24.980
14.30	0.250	0.001	0.036	0.037	0.001	0.971	0.967		0.0		7.421	10.303	24.715
15.30	0.244	0.001	0.035	0.036	0.005	0.960	0.955	1.035		0.0	7.491	10.354	23.280
16.30	0.235	0.001	0.035	0.036		0.945	0.953				7.562	10.406	19.772
17.30	0.227	0.001	0.032	0.033		0.932	0.937				7.562	10.409	14.882
18.30	0.213	0.001	0.032	0.033		0.915	0.917		0.0	0.0	7.421	10.311	11.374

TIME (EST)	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	4.678	0.0	0.0	0.0
1.30	4.208	0.0	0.0	0.0
2.30	3.883	0.0	0.0	0.0
3.30	3.236	0.0	0.0	0.0
4.30	2.725	0.0	0.0	0.0
5.30	2.642	0.0	0.0	0.0
6.30	2.403	0.0	0.002	0.036
7.30	3.225	0.004	0.082	1.596
8.30	7.342	0.012	0.292	10.296
9.30	11.347	0.022	0.518	31.884
10.30	14.072	0.030	0.698	66.204
11.30	16.483	0.036	0.805	110.010
12.30	17.542	0.036	0.819	158.562
13.30	18.375	0.032	0.747	206.406
14.30	18.603	0.025	0.588	248.364
15.30	18.708	0.015	0.373	279.774
16.30	18.219	0.006	0.132	297.815
17.30	14.539	0.001	0.004	303.431
18.30	10.919	0.0	0.0	303.600

CHAMBER NO. 3
11- 2-78

90 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 095 : EXMA/NOX(VAR.)/CUS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	PAN PPM	T-SUL PPM	CUS PPM	CUS-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
0.47	0.0	0.002	0.001	0.003							4.719	8.554	8.185
1.47	0.0	0.002	0.001	0.003							4.056	8.166	7.600
2.47	0.0	0.002	0.002	0.004							3.318	7.752	7.175
3.47	0.0	0.002	0.001	0.003							3.155	7.663	6.484
4.47	0.0	0.002	0.001	0.003							2.420	7.273	5.815
5.47	0.0	0.112	0.027	0.139							2.055	7.086	4.465
6.47	0.0	0.159	0.037	0.197						0.0	1.836	6.976	4.305
7.47	0.000	0.157	0.037	0.194		0.931	0.937	0.935	0.0		2.420	7.273	4.783
8.47	0.002	0.154	0.038	0.192		0.931	0.939				6.007	9.355	10.205
9.47	0.003	0.148	0.043	0.191		0.931	0.934	0.970	0.0	0.0	6.856	9.917	15.307
10.47	0.005	0.140	0.047	0.187		0.926	0.932				7.068	10.060	19.825
11.47	0.007	0.132	0.054	0.187		0.925	0.932	0.980	0.0	0.0	7.280	10.206	22.429
12.47	0.008	0.122	0.061	0.183	0.000	0.928	0.934				7.280	10.205	24.343
13.47	0.008	0.114	0.066	0.180	0.000	0.926	0.932	1.020			7.421	10.303	24.874
14.47	0.008	0.106	0.070	0.176	0.001	0.929	0.928		0.0		7.421	10.304	24.396
15.47	0.005	0.098	0.076	0.174		0.936	0.937	0.970		0.200	7.491	10.354	22.908
16.47	0.003	0.093	0.078	0.171		0.915	0.917				7.562	10.406	18.815
17.47	0.001	0.089	0.078	0.167		0.894	0.903				7.562	10.409	14.085
18.47	0.000	0.089	0.078	0.167		0.880	0.889		0.0	0.0	7.421	10.311	10.843

TIME (EST)	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	4.678	0.0	0.0	0.0
1.47	4.208	0.0	0.0	0.0
2.47	3.883	0.0	0.0	0.0
3.47	3.236	0.0	0.0	0.0
4.47	2.725	0.0	0.0	0.0
5.47	2.642	0.0	0.0	0.0
6.47	2.403	0.0	0.002	0.056
7.47	3.225	0.004	0.082	2.432
8.47	7.342	0.012	0.292	13.274
9.47	11.347	0.022	0.518	37.168
10.47	14.072	0.030	0.698	73.324
11.47	16.483	0.036	0.805	118.221
12.47	17.542	0.036	0.819	166.916
13.47	18.375	0.032	0.747	214.025
14.47	18.603	0.025	0.588	254.361
15.47	18.708	0.015	0.373	283.578
16.47	18.219	0.006	0.132	299.162
17.47	14.539	0.001	0.004	303.472
18.47	10.919	0.0	0.0	303.600

CHAMBER NO. 4
11- 2-78

90 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 095 : EKMA/NOX(VAR.)/COS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	PAN PPM	T-SOL PPM	COS PPM	COS-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
0.63	0.0	0.002	0.001	0.003							5.001	8.724	8.664
1.63	0.0	0.002	0.000	0.002							4.269	8.288	8.026
2.63	0.0	0.002	0.001	0.003							5.892	8.072	7.494
3.63	0.0	0.002	0.001	0.003							3.441	7.819	7.069
4.63	0.0	0.095	0.001	0.095							2.566	7.349	5.793
5.63	0.0	0.097	0.022	0.120							2.055	7.086	4.785
6.63	0.0	0.162	0.043	0.205		0.940	0.948			0.0	1.836	6.976	4.677
7.63	0.001	0.154	0.044	0.198		0.945	0.950	0.905	0.0		2.784	7.464	5.634
8.63	0.003	0.133	0.065	0.198		0.947	0.951				6.856	9.919	11.321
9.63	0.009	0.096	0.096	0.193		0.947	0.948	0.930	0.0	0.0	7.562	10.408	16.158
10.63	0.025	0.061	0.125	0.186		0.945	0.946				7.844	10.608	20.091
11.63	0.055	0.032	0.145	0.177	0.000	0.945	0.948	1.020	0.0	0.0	7.914	10.658	22.429
12.63	0.103	0.016	0.150	0.166		0.947	0.951				7.985	10.709	23.811
13.63	0.150	0.008	0.146	0.154	0.004	0.943	0.951	1.045			8.055	10.760	24.236
14.63	0.184	0.004	0.137	0.141	0.006	0.945	0.941		0.0		8.055	10.760	23.811
15.63	0.195	0.002	0.126	0.128	0.008	0.947	0.946	0.940		0.0	8.126	10.813	22.057
16.63	0.185	0.001	0.104	0.105		0.918	0.925				8.196	10.867	17.965
17.63	0.159	0.002	0.074	0.075		0.903	0.910				8.126	10.818	15.713
18.63	0.139	0.001	0.057	0.058		0.893	0.900		0.0	0.0	7.703	10.512	10.650

TIME (EST)	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	4.678	0.0	0.0	0.0
1.63	4.208	0.0	0.0	0.0
2.63	3.883	0.0	0.0	0.0
3.63	3.236	0.0	0.0	0.0
4.63	2.725	0.0	0.0	0.0
5.63	2.642	0.0	0.0	0.0
6.63	2.403	0.0	0.002	0.076
7.63	3.225	0.004	0.082	3.220
8.63	7.342	0.012	0.292	16.078
9.63	11.347	0.022	0.518	42.140
10.63	14.072	0.030	0.698	80.024
11.63	16.483	0.036	0.805	125.949
12.63	17.542	0.036	0.819	174.778
13.63	18.375	0.032	0.747	221.196
14.63	18.603	0.025	0.588	260.006
15.63	18.708	0.015	0.373	287.159
16.63	18.219	0.006	0.132	300.429
17.63	14.539	0.001	0.004	303.511
18.63	10.919	0.0	0.0	303.600

RTI SMOG CHAMBER STUDY
RUN 096 : EKMA/NOX(0.05)/COS

CHAMBER NO. 1
11- 3-78

46 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	COS PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
												3.074	7.618
0.13	0.0	0.001	0.002	0.003								2.493	7.310
1.13	0.0	0.001	0.002	0.003									
2.13	0.0	0.002	0.001	0.003	3.205	0.006							
3.13	0.0	0.002	0.000	0.002	3.125	0.006						0.282	6.237
4.13	0.0	0.002	0.001	0.003	3.123	0.414						0.655	6.408
5.13	0.0	0.026	0.007	0.033	11.883	0.407	0.192					-0.355	5.955
6.13	0.0	0.039	0.009	0.048	11.883	0.407	0.189	0.0	0.0	0.0	0.0	-0.355	5.955
7.13	0.0	0.039	0.010	0.049	11.728	0.398	0.188	0.0	0.0			3.074	7.619
8.13	0.003	0.029	0.020	0.049	11.838	0.401	0.176	0.0	0.0	0.0		6.078	9.402
9.13	0.018	0.014	0.033	0.047	11.781	0.405	0.170	0.0	0.0		0.0	9.607	11.955
10.13	0.071	0.009	0.037	0.045	11.382	0.405	0.148	0.0	0.0			9.960	12.240
11.13	0.159	0.004	0.037	0.041	11.490	0.399	0.103	0.0	0.0	0.0		10.101	12.355
12.13	0.220	0.003	0.035	0.039	11.702	0.394	0.070	0.0	0.0		0.0	10.101	12.355
13.13	0.237	0.002	0.035	0.038	11.615	0.386	0.052	0.0	0.0		0.0	10.101	12.355
14.13	0.234	0.002	0.035	0.038	11.479	0.381	0.040			3.751		10.031	12.298
15.13	0.224	0.003	0.035	0.037	11.372	0.375	0.029	0.0	0.0			9.889	12.183
16.13	0.215	0.002	0.033	0.036	10.842	0.360	0.026					9.889	12.185
17.13	0.203	0.002	0.033	0.035	10.757	0.356	0.020	0.0	0.0			9.254	11.678
18.13													

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	8.186	3.022	0.0	0.0	0.0
1.13	7.622	2.442	0.0	0.0	0.0
2.13	7.111	2.272	0.0	0.0	0.0
3.13	6.537	1.717	0.0	0.0	0.0
4.13	3.774	1.044	0.0	0.0	0.0
5.13	2.976	0.411	0.0	0.0	0.0
6.13	2.073	0.194	0.0	0.002	0.016
7.13	1.648	0.900	0.004	0.043	0.455
8.13	5.474	4.379	0.009	0.118	3.620
9.13	8.876	7.594	0.019	0.363	12.611
10.13	16.476	12.642	0.035	0.770	37.566
11.13	19.931	15.544	0.037	0.795	83.961
12.13	22.217	17.400	0.036	0.759	131.380
13.13	21.207	17.342	0.025	0.465	174.627
14.13	21.632	17.428	0.019	0.358	201.692
15.13	20.091	17.047	0.010	0.181	221.792
16.13	18.496	16.036	0.005	0.082	231.879
17.13	15.839	13.453	0.0	0.004	236.191
18.13	11.852				236.431

CHAMBER NO. 2
11- 3-78

46 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 096 : EKMA/NOX(0.05)/COS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	COS PPM	COS-M PPM	SO2-M PPM	1-P-S UG/M3	CN-5 K-CN/CM3
0.30	0.0	0.001	0.002	0.003									
1.30	0.0	0.002	0.002	0.004									
2.30	0.0	0.001	0.001	0.002	3.430	0.017							
3.30	0.0	0.001	0.001	0.002	3.262	0.016							
4.30	0.0	0.001	0.000	0.002	11.864	0.407							
5.30	0.0	0.027	0.008	0.035	12.227	0.402	0.175						
6.30	0.0	0.041	0.009	0.050	12.079	0.395	0.173	0.940	0.959	0.850	0.0	0.0	0.0
7.30	0.000	0.040	0.009	0.049	12.090	0.394	0.173	0.945	0.959				
8.30	0.004	0.031	0.019	0.050	11.995	0.392	0.168	0.939	0.951	0.820	0.0	0.0	
9.30	0.015	0.017	0.032	0.048	11.935	0.403	0.172	0.942	0.951				0.0
10.30	0.075	0.009	0.039	0.048	11.689	0.402	0.134	0.942	0.935	0.825	0.0		
11.30	0.164	0.004	0.042	0.046	11.787	0.396	0.099	0.942	0.934			0.0	
12.30	0.229	0.003	0.038	0.042	12.020	0.392	0.074	0.940	0.948	0.810	0.0		0.0
13.30	0.246	0.003	0.038	0.041	11.879	0.376	0.043	0.936	0.935				0.200
14.30	0.248	0.003	0.037	0.041	11.793	0.377	0.035	0.917	0.921			1.975	
15.30	0.238	0.003	0.038	0.040	11.713	0.368	0.028	0.914	0.923				
16.30	0.229	0.002	0.036	0.038									
17.30	0.218	0.002	0.035	0.037	11.194	0.357	0.019	0.898	0.912				
18.30													

TIME (EST)	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	3.074	7.619	5.160	3.022	0.0	0.0	0.0
1.30	2.493	7.311	5.021	2.442	0.0	0.0	0.0
2.30	1.909	7.012	4.616	2.272	0.0	0.0	0.0
3.30	1.542	6.831	3.774	1.717	0.0	0.0	0.0
4.30	0.655	6.408	2.923	1.044	0.0	0.0	0.0
5.30	0.133	6.170	1.594	0.411	0.0	0.0	0.0
6.30	-0.187	6.028	1.329	0.194	0.0	0.002	0.036
7.30	-0.355	5.955	1.329	0.900	0.004	0.043	0.894
8.30	3.435	7.817	5.846	4.379	0.009	0.118	4.824
9.30	6.220	9.494	8.929	7.594	0.019	0.363	16.314
10.30	9.607	11.955	17.646	12.642	0.035	0.770	45.420
11.30	9.748	12.066	20.782	15.544	0.037	0.795	92.070
12.30	9.748	12.065	22.854	17.400	0.036	0.759	139.122
13.30	9.819	12.123	21.473	17.342	0.025	0.465	179.370
14.30	9.889	12.181	21.845	17.428	0.019	0.358	205.344
15.30	9.748	12.067	20.091	17.047	0.010	0.181	223.638
16.30	9.748	12.068	18.284	16.036	0.005	0.082	232.716
17.30	9.607	11.956	15.307	13.453	0.0	0.004	236.232
18.30	9.042	11.512	11.161				236.472

CHAMBER NO. 3
11- 3-78

46 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 096 : EKMA/NOX(0.05)/COS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	COS PPM	COS-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3
0.47	0.0	0.005	0.007	0.012									
1.47	0.0	0.004	0.001	0.004									
2.47	0.0	0.003	0.002	0.005	3.324	0.004							
3.47	0.0	0.004	0.003	0.007	3.237								
4.47	0.0	0.029	0.010	0.040	11.713	0.231							
5.47	0.0	0.029	0.009	0.038	11.942	0.413	0.187						
6.47	0.0	0.038	0.009	0.047	11.956	0.413	0.189	0.959	0.964	0.845	0.0	0.0	0.0
7.47	0.000	0.034	0.013	0.047	11.914	0.409	0.182	0.956	0.962				
8.47	0.009	0.019	0.027	0.046	11.851	0.407	0.172	0.950	0.959	0.810	0.0	0.0	
9.47	0.035	0.011	0.035	0.046	11.757	0.418	0.169	0.954	0.959				0.0
10.47	0.113	0.005	0.037	0.041	11.558	0.413	0.130	0.957	0.951	0.805	0.0		
11.47	0.195	0.003	0.035	0.038	11.683	0.411	0.093	0.953	0.951			0.0	
12.47	0.236	0.003	0.035	0.038						0.790	0.0		0.0
13.47	0.239	0.002	0.036	0.038	11.881	0.403	0.048	0.950	0.957				0.0
14.47	0.236	0.003	0.035	0.039	11.827	0.394	0.034	0.912	0.942			2.551	
15.47	0.226	0.003	0.035	0.038	11.592	0.388	0.031	0.929	0.939				
16.47	0.215	0.002	0.034	0.036									
17.47	0.204	0.001	0.034	0.035	11.131	0.379	0.021	0.921	0.928				
18.47													

TIME (EST)	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	2.566	7.349	5.589	3.022	0.0	0.0	0.0
1.47	1.836	6.976	5.078	2.442	0.0	0.0	0.0
2.47	1.395	6.758	4.673	2.272	0.0	0.0	0.0
3.47	0.877	6.511	3.933	1.717	0.0	0.0	0.0
4.47	0.877	6.512	3.083	1.044	0.0	0.0	0.0
5.47	-0.187	6.028	2.285	0.411	0.0	0.0	0.0
6.47	-1.030	5.668	1.382	0.194	0.0	0.002	0.056
7.47	-0.103	6.065	1.701	0.900	0.004	0.043	1.333
8.47	4.083	8.181	6.378	4.379	0.009	0.118	6.028
9.47	6.432	9.635	9.142	7.594	0.019	0.363	20.017
10.47	8.901	11.399	18.124	12.642	0.035	0.770	53.274
11.47	9.042	11.506	20.941	15.544	0.037	0.795	100.179
12.47	9.183	11.615	22.642	17.400	0.036	0.759	146.864
13.47	9.254	11.672	21.473	17.342	0.025	0.465	184.113
14.47	9.324	11.727	21.313	17.428	0.019	0.358	208.996
15.47	9.183	11.617	19.559	17.047	0.010	0.181	225.484
16.47	9.183	11.619	17.433	16.036	0.005	0.082	233.552
17.47	9.113	11.566	14.085	13.453	0.0	0.004	236.273
18.47	8.690	11.241	10.789				236.513

CHAMBER NO. 4
11- 3-78

46 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 096 : EKMA/NOX(0.05)/CUS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	CUS PPM	T-P-S UG/M3	CN-5 K=CN/CM3	DEWPT DEG C	H2O K=PPM
												2.639	7.387
0.63	0.0	0.001	0.003	0.004								2.493	7.311
1.63	0.0	0.001	0.002	0.004								2.128	7.123
2.63	0.0	0.002	0.001	0.004	3.207	0.004						0.729	6.442
3.63	0.0	0.003	0.001	0.004	3.169							0.207	6.203
4.63	0.0	0.027	0.007	0.035	11.818	0.010						-0.271	5.991
5.63	0.0	0.027	0.008	0.035	12.057	0.386	0.172					-0.691	5.810
6.63	0.0	0.039	0.010	0.049	11.993	0.381	0.174	0.0	0.0	0.0	0.0	0.877	6.511
7.63	0.001	0.033	0.016	0.049	12.010	0.379	0.166	0.0	0.0			4.798	8.602
8.63	0.010	0.018	0.031	0.048	11.927	0.376	0.152	0.0	0.0	0.0		7.139	10.114
9.63	0.039	0.010	0.036	0.046	11.740	0.388	0.149	0.0	0.0		0.0	9.607	11.954
10.63	0.121	0.004	0.038	0.042				0.0	0.0			9.607	11.953
11.63	0.198	0.004	0.037	0.041	11.732	0.375	0.077	0.0	0.0	0.0		9.748	12.065
12.63	0.238	0.003	0.037	0.040	11.993	0.374	0.052	0.0	0.0		0.0	9.748	12.066
13.63	0.243	0.003	0.036	0.039	11.909	0.369	0.042				0.0	9.748	12.066
14.63	0.239	0.003	0.037	0.040	11.810	0.364	0.029	0.0	0.0	3.319		9.607	11.954
15.63	0.229	0.003	0.036	0.039	11.459	0.351	0.028	0.0	0.0			9.607	11.955
16.63	0.219	0.002	0.035	0.038	11.304	0.350	0.021					9.466	11.844
17.63	0.208	0.002	0.035	0.037				0.0	0.0			9.042	11.513
18.63													

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	5.858	3.022	0.0	0.0	0.0
1.63	5.666	2.442	0.0	0.0	0.0
2.63	5.155	2.272	0.0	0.0	0.0
3.63	4.093	1.717	0.0	0.0	0.0
4.63	2.923	1.044	0.0	0.0	0.0
5.63	2.179	0.411	0.0	0.0	0.0
6.63	1.169	0.194	0.0	0.002	0.076
7.63	3.455	0.900	0.004	0.043	1.745
8.63	7.069	4.379	0.009	0.118	7.160
9.63	10.471	7.594	0.019	0.363	23.501
10.63	18.656	12.642	0.035	0.770	60.666
11.63	20.835	15.544	0.037	0.795	107.811
12.63	22.589	17.400	0.036	0.759	154.150
13.63	21.632	17.342	0.025	0.465	188.577
14.63	20.941	17.428	0.019	0.358	212.432
15.63	19.187	17.047	0.010	0.181	227.222
16.63	16.955	16.036	0.005	0.082	234.339
17.63	13.287	13.453	0.0	0.004	236.311
18.63	10.949				236.551

CHAMBER NO. 1
11- 5-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 097 : NOX(VAR.)/C4SH4

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	PAN PPM	T-SOL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM	T-P-S UG/M3
0.13	0.0	0.002	0.001	0.003	1.650	0.004							
1.13	0.0	0.003	0.001	0.003	1.550	0.003							
2.13	0.0	0.003	0.002	0.005									
3.13	0.0	0.003	0.000	0.003									
4.13	0.0	0.004	0.000	0.004	1.588	0.002							
5.13	0.0	0.077	0.019	0.096	1.610								
6.13	0.0	0.079	0.015	0.094	9.649	0.004		0.988		0.0	0.860	0.0	0.0
7.13	0.000	0.082	0.014	0.096	9.741	0.004		0.987		0.0			
8.13	0.002	0.076	0.020	0.096	9.595			0.980		0.0	0.830	0.0	7.701
9.13	0.016	0.049	0.041	0.090	9.579	0.005		0.960		0.0			
10.13	0.085	0.016	0.043	0.059	9.458	0.004		0.893	0.023	0.0	0.730	0.030	87.570
11.13	0.115	0.012	0.009	0.021	9.463	0.004	0.000	0.810	0.079	0.0			
12.13	0.074	0.011	0.005	0.016	9.358	0.006	0.000	0.771	0.114	0.002	0.530	0.100	87.249
13.13	0.055	0.011	0.004	0.015	9.300	0.004		0.748	0.141	0.004			
14.13	0.045	0.010	0.004	0.013	9.201	0.008		0.724	0.164	0.004	0.470	0.155	
15.13	0.037	0.014	0.002	0.016	9.151	0.003	0.000	0.711	0.178	0.005			33.656
16.13	0.030	0.010	0.002	0.012	8.925			0.687	0.176	0.009	0.420	0.180	
17.13	0.021	0.009	0.003	0.012	8.933	0.003		0.657	0.160	0.009			8.898

TIME (EST)	CN-S R-CN/CM3	DEWPT DEG C	H2O R-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13		7.491	10.360	12.065	6.272	0.0	0.0	0.0
1.13		6.290	9.540	10.630	5.261	0.0	0.0	0.0
2.13		4.588	8.473	9.673	4.186	0.0	0.0	0.0
3.13		3.795	8.017	8.717	3.164	0.0	0.0	0.0
4.13		2.566	7.348	7.441	2.344	0.0	0.0	0.0
5.13		1.395	6.758	4.571	1.728	0.0	0.0	0.0
6.13		1.099	6.617	3.508	1.414	0.0	0.004	0.031
7.13		1.099	6.617	3.295	2.583	0.004	0.111	1.106
8.13	0.0	5.368	8.951	7.122	5.469	0.012	0.228	8.678
9.13		8.972	11.457	12.118	9.789	0.026	0.508	24.542
10.13	0.250	13.456	15.425	16.902	12.736	0.031	0.628	55.958
11.13		14.914	16.949	20.675	16.142	0.038	0.857	95.425
12.13	0.0	15.727	17.855	23.386	18.425	0.038	0.869	146.938
13.13		16.028	18.196	24.555	19.342	0.034	0.782	198.400
14.13		16.398	18.635	25.193	20.250	0.025	0.605	243.939
15.13	0.200	16.774	19.086	24.555	20.686	0.015	0.372	278.421
16.13	0.0	16.924	19.272	21.366	19.778	0.006	0.132	298.869
17.13		14.694	16.714	16.689	15.164	0.0	0.001	305.767

CHAMBER NO. 2
11- 5-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 097 : NOX(VAR.)/C4SH4

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SOL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM
0.30	0.0	0.002	0.001	0.002	1.525	0.005							
1.30	0.0	0.003	0.001	0.003	1.526	0.005							
2.30	0.0	0.003	0.000	0.003									
3.30	0.0	0.003	0.001	0.004									
4.30	0.0	0.003	0.001	0.004	1.606	0.004							
5.30	0.0	0.159	0.040	0.199	1.601	0.005	0.003						
6.30	0.0	0.163	0.034	0.197	10.036	0.005			1.029		0.0	0.870	0.0
7.30	0.000	0.165	0.035	0.199	10.053	0.005			1.023		0.0		
8.30	0.002	0.154	0.043	0.197	10.008	0.006			1.015		0.0	0.885	0.0
9.30	0.009	0.119	0.072	0.191	10.066	0.007			0.991		0.0		
10.30	0.045	0.041	0.121	0.162	9.867	0.004			0.932	0.020	0.0	0.760	0.030
11.30	0.170	0.016	0.075	0.090	9.881	0.004		0.000	0.836	0.086	0.0		
12.30	0.174	0.009	0.021	0.030	9.785	0.007		0.001	0.728	0.199	0.004	0.400	0.210
13.30	0.126	0.008	0.014	0.022	9.804	0.003			0.693	0.254	0.014		
14.30	0.104	0.009	0.012	0.021	9.783	0.003		0.001	0.666	0.289	0.014	0.270	0.310
15.30	0.091	0.008	0.011	0.019	9.443			0.001	0.648	0.301	0.018		
16.30	0.077	0.006	0.011	0.017	9.475	0.004			0.627	0.303	0.020	0.225	0.320
17.30	0.065	0.006	0.011	0.017	9.355	0.003		0.001	0.599	0.285	0.018		

TIME (EST)	T-P-B UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30			7.068	10.066	8.557	6.272	0.0	0.0	0.0
1.30			5.723	9.175	7.335	5.261	0.0	0.0	0.0
2.30			4.584	8.474	6.644	4.186	0.0	0.0	0.0
3.30			3.651	7.937	5.421	3.164	0.0	0.0	0.0
4.30			2.347	7.236	4.465	2.344	0.0	0.0	0.0
5.30			1.468	6.795	3.030	1.728	0.0	0.0	0.0
6.30	0.0		0.951	6.547	2.498	1.414	0.0	0.004	0.072
7.30			1.395	6.759	3.455	2.583	0.004	0.111	2.238
8.30	4.845	0.200	5.510	9.040	7.016	5.469	0.012	0.228	11.004
9.30			9.607	11.957	13.978	9.789	0.026	0.508	29.724
10.30	53.563	0.210	11.449	13.518	17.114	12.736	0.031	0.628	62.364
11.30			11.805	13.837	21.898	16.142	0.038	0.857	104.166
12.30	127.244	0.0	11.805	13.835	25.406	18.425	0.038	0.869	155.802
13.30			11.734	13.769	26.150	19.342	0.034	0.782	206.376
14.30			11.805	13.834	26.150	20.250	0.025	0.605	250.110
15.30	71.953	0.200	11.876	13.900	24.715	20.686	0.015	0.372	282.216
16.30		0.0	11.876	13.903	20.941	19.778	0.006	0.152	300.215
17.30	25.177		11.805	13.842	15.786	15.164	0.0	0.001	305.777

CHAMBER NO. 3
11- 5-78

94 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 097 : NOX(VAR.)/C4SH4

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	PAN PPM	T-SUL PPM	SO2 PPM	CO3 PPM	THIO-M PPM	SO2-M PPM	T-P-S UG/M3
0.47	0.0	0.002	0.002	0.003	1.529	0.008							
1.47	0.0	0.002	0.002	0.004	1.525	0.007							
2.47	0.0	0.003	0.002	0.005									
3.47	0.0	0.003	0.001	0.005									
4.47	0.0	0.004	0.002	0.006	1.571								
5.47	0.0	0.322	0.079	0.401	10.210								
6.47	0.0	0.321	0.080	0.401	10.119			1.012		0.0	0.860	0.0	2.083
7.47	0.000	0.321	0.083	0.404	10.184			0.999		0.0			
8.47	0.001	0.308	0.087	0.395	10.055			0.997		0.0	0.870	0.0	5.040
9.47	0.004	0.269	0.118	0.388	10.087	0.003		0.977		0.0			
10.47	0.009	0.193	0.172	0.365	9.973	0.003		0.939	0.023	0.0	0.750	0.020	23.327
11.47	0.035	0.042	0.229	0.271	9.969	0.004		0.887	0.023	0.0			
12.47	0.100	0.035	0.215	0.250	9.914		0.000	0.817	0.123	0.0	0.580	0.120	53.944
13.47	0.157	0.019	0.166	0.185	9.894			0.764	0.178	0.005			
14.47	0.187	0.013	0.118	0.130	9.827	0.003	0.001	0.719	0.219	0.005	0.410	0.235	
15.47	0.184	0.011	0.086	0.097	9.827	0.004	0.001	0.690	0.245	0.009			64.514
16.47	0.157	0.008	0.067	0.075	9.191			0.670	0.247	0.007	0.330	0.260	
17.47	0.126	0.008	0.048	0.056	9.595	0.004	0.001						25.635

TIME (EST)	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47		6.856	9.920	9.354	6.272	0.0	0.0	0.0
1.47		5.083	8.775	8.238	5.261	0.0	0.0	0.0
2.47		3.939	8.099	6.856	4.186	0.0	0.0	0.0
3.47		3.146	7.658	5.953	3.164	0.0	0.0	0.0
4.47		1.689	6.903	4.624	2.344	0.0	0.0	0.0
5.47		1.099	6.616	3.827	1.728	0.0	0.0	0.0
6.47		0.431	6.305	3.083	1.414	0.0	0.004	0.113
7.47		1.836	6.976	4.093	2.583	0.004	0.111	3.370
8.47	0.280	6.007	9.357	7.175	5.469	0.012	0.228	13.330
9.47		10.243	12.477	15.041	9.789	0.026	0.508	34.906
10.47	0.250	11.235	13.328	18.071	12.736	0.031	0.628	68.770
11.47		11.734	13.772	22.589	16.142	0.038	0.857	112.907
12.47	0.0	11.948	13.966	25.193	18.425	0.038	0.869	164.666
13.47		11.805	13.834	26.150	19.342	0.034	0.782	214.352
14.47		11.948	13.965	25.990	20.250	0.025	0.605	256.281
15.47	0.0	12.091	14.098	24.396	20.686	0.015	0.372	286.010
16.47	0.0	12.091	14.102	19.772	19.778	0.006	0.132	301.562
17.47		11.662	13.712	14.776	15.164	0.0	0.001	305.788

RTI SMOG CHAMBER STUDY
RUN 097 : NOX(VAR.)/C4SH4

CHAMBER NO. 4
11- 5-78

94 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	T-SUL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3
0.63	0.0	0.002	0.002	0.004	1.496								
1.63	0.0	0.003	0.002	0.004	1.485								
2.63	0.0	0.003	0.001	0.005									
3.63	0.0	0.003	0.001	0.005									
4.63	0.0				1.265								
5.63	0.0	0.486	0.134	0.620	9.859								
6.63	0.0	0.480	0.137	0.617	9.749		1.032		0.0	0.830	0.0	2.968	
7.63	0.000	0.474	0.145	0.619	9.879		1.016		0.0				
8.63	0.001	0.453	0.152	0.604	9.722		1.012		0.0	0.880	0.0	3.634	0.250
9.63	0.002	0.407	0.181	0.588	9.694		0.990		0.0				
10.63	0.004	0.350	0.222	0.572	9.628		0.959	0.018	0.0	0.810	0.020	16.016	0.210
11.63	0.008	0.269	0.274	0.543	9.601		0.910	0.054	0.0				
12.63	0.014	0.191	0.303	0.494	9.542		0.872	0.089	0.002	0.670	0.100	28.858	0.0
13.63	0.020	0.140	0.314	0.454	9.490		0.838	0.130	0.002				
14.63	0.022	0.108	0.315	0.423	9.387		0.812	0.153	0.002	0.560	0.150		
15.63	0.017	0.092	0.311	0.402	9.128		0.791	0.162	0.004			27.560	0.0
16.63	0.006	0.082	0.307	0.390			0.772	0.160	0.002	0.520	0.170		0.0
17.63	0.000	0.077	0.301	0.378								10.389	

TIME (EST)	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	7.139	10.114	9.992	6.272	0.0	0.0	0.0
1.63	5.012	8.731	8.610	5.261	0.0	0.0	0.0
2.63	3.867	8.058	6.697	4.186	0.0	0.0	0.0
3.63	3.146	7.658	6.325	3.164	0.0	0.0	0.0
4.63	1.836	6.976	4.890	2.344	0.0	0.0	0.0
5.63	1.099	6.616	3.933	1.728	0.0	0.0	0.0
6.63	0.431	6.305	3.242	1.414	0.0	0.004	0.151
7.63	3.074	7.619	5.262	2.583	0.004	0.111	4.436
8.63	6.361	9.586	8.398	5.469	0.012	0.228	15.518
9.63	10.384	12.595	16.317	9.789	0.026	0.508	39.782
10.63	10.809	12.955	18.868	12.736	0.031	0.628	74.798
11.63	10.951	13.075	23.120	16.142	0.038	0.857	121.135
12.63	11.093	13.198	25.087	18.425	0.038	0.869	173.008
13.63	10.951	13.073	25.884	19.342	0.034	0.782	221.860
14.63	11.093	13.198	25.512	20.250	0.025	0.605	262.089
15.63	11.093	13.199	23.652	20.686	0.015	0.372	289.581
16.63	11.093	13.202	18.815	19.778	0.006	0.132	302.829
17.63	10.951	13.081	14.404	15.164	0.0	0.001	305.797

CHAMBER NO. 1
11- 6-78

100 % SUNSHINE

KTI SMOG CHAMBER STUDY
RUN 098 : EKNA/NOX(VAR.)/C4SH4

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM	PAN PPM
0.13	0.0	0.002	0.002	0.004									
1.13	0.0	0.001	0.002	0.004									
2.13	0.0	0.002	0.002	0.003	2.348	0.003							
3.13	0.0	0.001	0.002	0.003	2.299	0.003							
4.13	0.0	0.000	0.002	0.002	2.266	0.005	0.008						
5.13	0.0	0.027	0.007	0.035	2.240	0.072	0.036						
6.13	0.000				10.564	0.091	0.041	0.981	0.013	0.000	0.880	0.0	
7.13	0.000	0.041	0.002	0.044	10.558	0.089	0.043	0.973	0.014	0.000			
8.13	0.004	0.032	0.011	0.043	10.680	0.089	0.042	0.962	0.014	0.001	0.845	0.0	
9.13	0.034	0.015	0.022	0.037	10.504	0.088	0.038	0.942	0.017	0.001			
10.13	0.077	0.013	0.009	0.021	10.334	0.085	0.026	0.912	0.038	0.001	0.765	0.030	
11.13	0.059	0.013	0.004	0.017	10.463	0.085	0.022	0.893	0.066	0.005			0.000
12.13	0.046	0.017	0.004	0.021	10.273	0.086	0.018	0.880	0.089	0.005	0.690	0.070	
13.13	0.040	0.018	0.002	0.021	10.175	0.082	0.015	0.864	0.110	0.006			0.001
14.13	0.036	0.017	0.003	0.020	10.059	0.081	0.012	0.845	0.124	0.010	0.615	0.105	0.000
15.13	0.031	0.018	0.004	0.021	10.006	0.078	0.008	0.833	0.142	0.014			0.001
16.13	0.025	0.018	0.004	0.022	9.857	0.084	0.009				0.580	0.130	0.000
17.13	0.017	0.016	0.005	0.021	9.782	0.081		0.782	0.123	0.014			

TIME (EST)	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13			4.583	8.472	10.152	4.344	0.0	0.0	0.0
1.13			3.702	7.964	9.461	3.775	0.0	0.0	0.0
2.13			3.249	7.713	8.717	3.156	0.0	0.0	0.0
3.13			2.649	7.392	8.398	2.694	0.0	0.0	0.0
4.13			2.420	7.272	7.228	2.253	0.0	0.0	0.0
5.13			1.836	6.976	4.730	1.800	0.0	0.0	0.0
6.13	2.787				3.827	1.472	0.0	0.001	0.008
7.13		0.0	1.321	6.723	3.083	2.069	0.004	0.076	0.653
8.13	5.466	0.0	4.226	8.264	7.282	5.958	0.012	0.261	6.656
9.13			9.960	12.244	13.234	10.766	0.023	0.528	24.598
10.13			14.694	16.712	19.134	15.433	0.031	0.718	57.560
11.13			15.887	18.039	23.120	18.772	0.036	0.818	101.420
12.13	25.832	0.0	16.810	19.129	26.043	21.075	0.035	0.820	150.516
13.13			17.746	20.294	27.160	22.119	0.031	0.740	199.092
14.13			17.760	20.311	27.532	22.597	0.024	0.588	242.306
15.13	16.399	0.200	17.913	20.509	26.362	22.433	0.015	0.370	275.885
16.13			17.760	20.315	23.439	21.497	0.006	0.134	296.245
17.13	7.181	0.0	16.473	18.730	18.602	17.458	0.0	0.003	303.263

CHAMBER NO. 2
11- 6-78

100 % SUNSHINE

RTI SOUG CHAMBER STUDY
RUN 098 : ERMA/NOX(VAR.)/C4S04

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-STIL PPM	SO2 PPM	COS PPM	INIT-N PPM	SO2-N PPM	PAN PPM
0.30	0.0	0.002	0.002	0.004									
1.30	0.0	0.001	0.002	0.004									
2.30	0.0	0.001	0.002	0.002	3.863	0.003							
3.30	0.0	0.001	0.002	0.003	3.641								
4.30	0.0	0.0	0.002	0.002	3.502								
5.30	0.0	0.057	0.015	0.072	6.540	0.068	0.030						
6.30	0.000	0.082	0.010	0.093	11.509	0.092	0.044	1.005	0.014	0.000	0.875	0.0	
7.30	0.000	0.079	0.014	0.093	11.512	0.086	0.036	0.997	0.014	0.000			
8.30	0.004	0.066	0.026	0.092	11.455	0.091	0.036	0.987	0.014	0.001	0.880	0.0	
9.30	0.032	0.028	0.054	0.082	11.445	0.088	0.032	0.968	0.022	0.001			
10.30	0.125	0.014	0.032	0.045	11.290	0.084	0.021	0.909	0.061	0.001	0.740	0.050	
11.30	0.116	0.014	0.016	0.030	11.346	0.082	0.012	0.858	0.118	0.005			0.003
12.30	0.092	0.013	0.015	0.029	11.283	0.078	0.005	0.858	0.167	0.007	0.570	0.170	0.003
13.30	0.085	0.013	0.014	0.027	11.245	0.077		0.811	0.213	0.018			0.003
14.30	0.079	0.011	0.014	0.025	11.262	0.073		0.782	0.244	0.019	0.450	0.260	0.003
15.30	0.072	0.010	0.015	0.025	11.141	0.073							0.003
16.30	0.065	0.010	0.016	0.026	11.002	0.069		0.752	0.244	0.019	0.390	0.280	0.002
17.30	0.050	0.009	0.017	0.026	10.851	0.067		0.719	0.243	0.020			

TIME (EST)	T-P-S UG/M3	CN-S #-CN/CM3	DEWPT DEG C	H2O #-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30			4.436	8.387	7.122	4.344	0.0	0.0	0.0
1.30			3.627	7.923	6.537	3.775	0.0	0.0	0.0
2.30			3.101	7.634	6.059	3.156	0.0	0.0	0.0
3.30			2.573	7.353	4.996	2.694	0.0	0.0	0.0
4.30			2.347	7.236	4.518	2.253	0.0	0.0	0.0
5.30			1.982	7.050	3.614	1.800	0.0	0.0	0.0
6.30	2.222		0.729	6.442	3.030	1.472	0.0	0.001	0.018
7.30		0.0	0.877	6.512	2.657	2.069	0.004	0.076	1.428
8.30	3.332	0.0	4.512	8.431	8.185	5.958	0.012	0.261	9.318
9.30			10.172	12.418	14.776	10.766	0.023	0.528	29.784
10.30			13.095	15.062	20.622	15.433	0.031	0.718	66.884
11.30					24.927	18.772	0.036	0.818	109.764
12.30	68.620	0.210	13.279	15.239	27.266	21.075	0.035	0.820	158.880
13.30			13.375	15.334	28.169	22.119	0.031	0.740	206.580
14.30			13.168	15.128	27.957	22.597	0.024	0.548	248.304
15.30	51.835	0.210	13.240	15.201	26.416	22.433	0.015	0.370	279.660
16.30			13.095	15.061	22.961	21.497	0.006	0.154	297.612
17.30	18.759	0.0	12.807			17.458	0.0	0.003	305.295

CHAMBER NO. 3
11- 6-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 098 : EKMA/NOX(VAR.)/C4SH4

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-BUL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM	PAN PPM
0.47	0.0	0.001	0.004	0.005									
1.47	0.0	0.002	0.003	0.006									
2.47	0.0	0.002	0.003	0.004	2.539								
3.47	0.0	0.001	0.003	0.004	2.466								
4.47	0.0	0.105	0.001	0.106	2.412								
5.47	0.0	0.109	0.030	0.139	11.050	0.076	0.036						
6.47	0.000	0.162	0.030	0.192	10.930	0.090	0.040	1.001	0.014	0.000	0.870	0.0	
7.47	0.000	0.158	0.032	0.190	10.992	0.089	0.039	1.001	0.014	0.000			
8.47	0.004	0.137	0.050	0.187	11.128	0.086	0.036	0.989	0.014	0.001	0.885	0.0	
9.47	0.015	0.077	0.096	0.173	10.919	0.090	0.032	0.968	0.026	0.001			
10.47	0.101	0.023	0.109	0.132	10.819	0.088	0.023	0.912	0.065	0.001	0.730	0.050	
11.47	0.208	0.013	0.046	0.059	10.848	0.081	0.013	0.827	0.148	0.005			0.005
12.47	0.162	0.011	0.026	0.037	10.740	0.077		0.769	0.224	0.009	0.480	0.230	0.007
13.47	0.131	0.011	0.021	0.032	10.731	0.074		0.778	0.269	0.020			0.006
14.47	0.113	0.010	0.019	0.029	10.642	0.074		0.768	0.293	0.020	0.370	0.310	
15.47	0.098	0.010	0.019	0.029	10.697	0.072							0.004
16.47	0.082	0.010	0.019	0.029	10.547	0.065		0.727	0.284	0.021	0.350	0.330	0.004
17.47	0.067	0.009	0.014	0.023	10.360	0.066		0.704	0.280	0.023			

TIME (EST)	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47			3.715	7.972	7.388	4.344	0.0	0.0	0.0
1.47			3.190	7.682	6.963	3.775	0.0	0.0	0.0
2.47			2.445	7.285	6.431	3.156	0.0	0.0	0.0
3.47			1.913	7.014	5.900	2.694	0.0	0.0	0.0
4.47			1.909	7.012	4.837	2.253	0.0	0.0	0.0
5.47			1.689	6.903	3.933	1.800	0.0	0.0	0.0
6.47	3.159		0.506	6.339	3.136	1.472	0.0	0.001	0.028
7.47		0.0	1.099	6.617	3.083	2.069	0.004	0.076	2.203
8.47	2.308	0.0	5.723	9.174	9.248	5.958	0.012	0.261	11.980
9.47			10.951	13.080	15.467	10.766	0.023	0.528	35.170
10.47			13.240	15.204	21.313	15.433	0.031	0.718	72.208
11.47			13.403	15.365	25.087	18.772	0.036	0.818	118.108
12.47	103.757	0.0	13.500	15.460	27.425	21.075	0.035	0.820	167.244
13.47			13.741	15.704	28.435	22.119	0.031	0.740	214.188
14.47			13.456	15.416	27.904	22.597	0.024	0.588	254.301
15.47	58.925	0.250	13.529	15.490	26.097	22.433	0.015	0.370	283.434
16.47			13.456	15.420	22.376	21.497	0.006	0.134	298.978
17.47	24.664	0.0	12.879	14.854	16.476	17.458	0.0	0.003	303.324

CHAMBER NO. 4
11- 6-78

100 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 098 : EKMA/NOX(VAR.)/C4SH4

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SOL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM	PAN PPM
0.63	0.0	0.002	0.003	0.005									
1.63	0.0	0.002	0.002	0.005									
2.63	0.0	0.002	0.002	0.003	2.468	0.004							
3.63	0.0	0.002	0.002	0.004	2.346								
4.63	0.0	0.172	0.0	0.172	2.286								
5.63	0.0	0.176	0.044	0.221	10.750	0.064	0.029						
6.63	0.000	0.324	0.079	0.403	10.659	0.087	0.044	1.001	0.014	0.000	0.865	0.0	
7.63	0.000	0.315	0.082	0.397	10.687	0.085	0.038	0.990	0.014	0.000			
8.63	0.002	0.286	0.101	0.387	10.591	0.086	0.037	0.983	0.014	0.001	0.890	0.0	
9.63	0.005	0.224	0.145	0.369	10.557	0.087	0.034	0.966	0.026	0.001			
10.63	0.019	0.124	0.217	0.341	10.540	0.092	0.027	0.926	0.054	0.001	0.770	0.040	
11.63	0.075	0.045	0.241	0.286	10.535	0.083	0.020	0.878	0.107	0.004			0.001
12.63	0.150	0.021	0.195	0.216	10.472	0.078	0.011	0.832	0.167	0.006	0.565	0.160	0.003
13.63	0.202	0.014	0.142	0.156	10.439	0.073		0.794	0.222	0.013			0.005
14.63	0.225	0.011	0.094	0.105	10.361	0.076		0.753	0.262	0.013	0.410	0.280	0.009
14.97								0.748	0.277	0.015			
15.63	0.206	0.010	0.065	0.075	10.322	0.065							0.009
16.63	0.175	0.009	0.051	0.061	10.170	0.065		0.681	0.263	0.014	0.330	0.310	0.010
16.80								0.678	0.261	0.014			
17.63	0.145	0.009	0.043	0.052	9.914	0.068		0.657	0.257	0.014			

TIME (EST)	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63			4.000	8.133	7.707	4.344	0.0	0.0	0.0
1.63			3.332	7.759	7.175	3.775	0.0	0.0	0.0
2.63			2.732	7.436	6.644	3.156	0.0	0.0	0.0
3.63			2.275	7.198	6.059	2.694	0.0	0.0	0.0
4.63			1.909	7.012	5.209	2.253	0.0	0.0	0.0
5.63			1.836	6.976	4.305	1.800	0.0	0.0	0.0
6.63	0.0		0.655	6.407	3.348	1.472	0.0	0.001	0.038
7.63		0.0	1.615	6.867	3.933	2.069	0.004	0.076	2.933
8.63	3.607	0.0	6.785	9.871	10.630	5.958	0.012	0.261	14.486
9.63			11.093	13.204	16.742	10.766	0.023	0.528	40.238
10.63			12.377	14.368	21.845	15.433	0.031	0.718	79.100
11.63			12.528	14.320	25.725	18.772	0.036	0.818	125.960
12.63	50.502	0.0	12.352	14.341	27.213	21.075	0.035	0.820	175.116
13.63			12.519	14.499	28.435	22.119	0.031	0.740	221.292
14.63			12.377	14.364	27.532	22.597	0.024	0.588	259.946
14.97									271.941
15.63	72.290	0.0	12.377	14.366	25.246	22.433	0.015	0.370	286.986
16.63			12.162	14.167	21.419	21.497	0.006	0.134	300.265
16.80									301.632
17.63	23.952	0.0	11.734	13.776	15.892	17.458	0.0	0.003	303.353

RII SMOG CHAMBER STUDY
RUN 108 : SO2 DECAY

CHAMBER NO. 1
6-14-79

86 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.13	0.0	0.0	0.001	0.001	0.801	0.0	0.0			11.092	13.203	15.657	13.644
1.13	0.0	0.0	0.001	0.001	0.708	0.0	0.0			10.935	13.067	14.687	13.447
2.13	0.0	0.0	0.0	0.0		0.0	0.0			10.353	12.570	13.921	13.214
3.13	0.0	0.0	0.0	0.0	0.611	0.0	0.0			10.692	12.859	13.208	13.292
4.13	0.0	0.003	0.0	0.003		0.0	0.0			11.672	13.723	13.367	13.236
5.13	0.0	0.004	0.000	0.004	10.085	1.237	1.051	5.623	0.210	10.679	12.848	11.686	12.861
6.13	0.0	0.000	0.001	0.001	10.067	0.898	0.959		215.000	11.140	13.247	13.483	14.639
7.13	0.001	0.0	0.000	0.000	10.028	0.989	0.807	10.428		13.095	15.064	18.991	17.317
8.13	0.006	0.002	0.001	0.003	9.996	0.918	0.788		148.000	13.601	15.567	21.995	19.783
9.13	0.014	0.002	0.002	0.004	9.955	0.855	0.673	29.947		13.746	15.710	27.113	21.553
10.13	0.024	0.002	0.003	0.004	9.895	0.783			30.000	13.819	15.783	29.218	23.083
11.13	0.035	0.016	0.010	0.026	9.782	0.712		47.601		13.964	15.931	30.656	24.103
12.13					9.780	0.647		48.033	9.600	14.037	16.006	31.221	24.589
13.13	0.050				9.548	0.590				14.037	16.006	30.861	25.267
14.13	0.058				9.531	0.528			8.500	14.110	16.082	31.221	25.442
15.13	0.062				9.377	0.483		39.882		14.102	16.073	31.369	25.694
16.13	0.063				9.249	0.439			5.700	14.077	16.050	28.425	24.811
17.13	0.058	0.002	0.001	0.004	8.926	0.397		28.129		14.053	16.027	25.738	23.786

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	0.0	0.0	0.0
1.13	0.0	0.0	0.0
2.13	0.0	0.0	0.0
3.13	0.0	0.0	0.0
4.13	0.0	0.0	0.0
5.13	0.002	0.036	0.281
6.13	0.009	0.202	3.736
7.13	0.021	0.471	17.954
8.13	0.033	0.689	47.914
9.13	0.048	1.011	91.766
10.13	0.060	1.217	154.032
11.13	0.067	1.343	228.035
12.13	0.062	1.196	307.468
13.13	0.063	1.276	379.852
14.13	0.054	1.099	455.031
15.13	0.043	0.918	519.559
16.13	0.026	0.541	571.698
17.13	0.017	0.375	602.864
18.00	0.010	0.305	622.439
19.00	0.001	0.021	640.739
20.00	0.0	0.0	641.999
21.00	0.0	0.0	641.999
22.00	0.0	0.0	641.999
23.00	0.0	0.0	641.999

CHAMBER NO. 2
6-14-79

86 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 108 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.30	0.0	0.0	0.001	0.001	1.396	0.0	0.0			10.947	13.077	14.689	13.644
1.30	0.0	0.0	0.0	0.0	1.341	0.0	0.0			10.932	13.065	13.924	13.447
2.30	0.0	0.0	0.0	0.0		0.0	0.0			10.421	12.628	13.005	13.214
3.30	0.0	0.0	0.0	0.0	1.267	0.0	0.0			10.903	13.040	12.393	13.292
4.30	0.0	0.002	0.0	0.002		0.0	0.0			11.314	13.402	12.244	13.236
5.30	0.0	0.003	0.000	0.003	10.936	1.228	1.125	2.759	0.250	11.395	13.475	11.656	12.861
6.30	0.0	0.0	0.0	0.0	10.862	1.066	0.968		98.000	11.502	13.568	14.173	14.639
7.30	0.001	0.0	0.000	0.000	10.903	0.991	0.857	7.709		12.664	14.644	19.038	17.317
8.30	0.008	0.002	0.001	0.003	10.858	0.931	0.738		68.000	12.807	14.780	22.145	19.783
9.30	0.017	0.002	0.002	0.004	10.844	0.860	0.678	18.741		12.951	14.917	25.829	21.553
10.30	0.031	0.001	0.002	0.004	10.820	0.783			31.000	12.951	14.916	27.575	23.083
11.30	0.044	0.010	0.010	0.021	10.752	0.714		30.979		13.095	15.057	27.934	24.103
12.30					10.773	0.647		39.770	6.500	13.095	15.056	28.807	24.589
13.30	0.067				10.615	0.585				13.168	15.127	29.167	25.267
14.30	0.076				10.521	0.528			6.500	13.240	15.199	28.807	25.442
15.30	0.081				10.433	0.480		36.022		13.155	15.115	29.107	25.694
16.30	0.082	0.003	0.001	0.004	10.362	0.442			4.200	13.131	15.093	26.625	24.811
17.30	0.079	0.002	0.000	0.002	10.147	0.402		29.762		13.035	15.000	24.502	23.786

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	0.0	0.0	0.0
1.30	0.0	0.0	0.0
2.30	0.0	0.0	0.0
3.30	0.0	0.0	0.0
4.30	0.0	0.0	0.0
5.30	0.002	0.036	0.648
6.30	0.009	0.202	5.796
7.30	0.021	0.471	22.758
8.30	0.033	0.689	54.942
9.30	0.048	1.011	102.078
10.30	0.060	1.217	166.446
11.30	0.067	1.343	241.734
12.30	0.062	1.196	319.667
13.30	0.063	1.276	392.867
14.30	0.054	1.099	466.241
15.30	0.043	0.918	528.923
16.30	0.026	0.541	577.217
17.30	0.017	0.375	606.688
18.00	0.010	0.305	622.439
19.00	0.001	0.021	640.739
20.00	0.0	0.0	641.999
21.00	0.0	0.0	641.999
22.00	0.0	0.0	641.999
23.00	0.0	0.0	641.999

CHAMBER NO. 3
6-14-79

86 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 108 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.47	0.003	0.0	0.001	0.001	1.407	0.0	0.0			10.590	12.770	15.159	13.644
1.47	0.001	0.0	0.0	0.0		0.0	0.0			10.505	12.698	14.342	13.447
2.47	0.0	0.0	0.0	0.0		0.0	0.0			10.065	12.331	13.320	13.214
3.47	0.0	0.000	0.000	0.001	1.292	0.0	0.0			11.113	13.223	13.325	13.292
4.47	0.0	0.001	0.0	0.001		0.0	0.0			11.098	13.211	12.149	13.236
5.47	0.0	0.0	0.000	0.000	10.924	1.225	1.042	3.831	0.520	10.691	12.858	12.140	12.861
6.47	0.0	0.0	0.0	0.0	10.905	1.101	0.922		72.000	11.793	13.831	14.913	14.639
7.47	0.003	0.001	0.000	0.001	10.882	1.046	0.853	7.703		12.807	14.782	19.598	17.317
8.47	0.011	0.002	0.001	0.003	10.861	0.991	0.802		83.000	12.951	14.919	23.270	19.783
9.47	0.020	0.002	0.002	0.004	10.843	0.932	0.798	21.075		13.095	15.058	26.445	21.553
10.47	0.033	0.001	0.003	0.005	10.844	0.865			80.000	13.095	15.056	28.448	23.083
11.47	0.046	0.001	0.003	0.004	10.809	0.802		40.469		13.168	15.128	28.397	24.103
12.47	0.057				10.760	0.741		46.630	8.600	13.240	15.198	29.218	24.589
13.47	0.067				10.663	0.688				13.240	15.198	29.629	25.267
14.47	0.075				10.611	0.636			6.000	13.312	15.270	30.091	25.442
15.47	0.080				10.489	0.595		42.377		13.224	15.182	29.361	25.694
16.47	0.079	0.003	0.002	0.005	10.431	0.554			4.200	13.272	15.232	27.238	24.811
17.47	0.074	0.002	0.002	0.004	10.230	0.514		36.654		13.103	15.067	24.500	23.786

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	0.0	0.0	0.0
1.47	0.0	0.0	0.0
2.47	0.0	0.0	0.0
3.47	0.0	0.0	0.0
4.47	0.0	0.0	0.0
5.47	0.002	0.036	1.015
6.47	0.009	0.202	7.856
7.47	0.021	0.471	27.562
8.47	0.033	0.689	61.970
9.47	0.048	1.011	112.390
10.47	0.060	1.217	178.859
11.47	0.067	1.343	255.432
12.47	0.062	1.196	331.867
13.47	0.063	1.276	405.882
14.47	0.054	1.099	477.451
15.47	0.043	0.918	538.287
16.47	0.026	0.541	582.735
17.47	0.017	0.375	610.513
18.00	0.010	0.305	622.439
19.00	0.001	0.021	640.739
20.00	0.0	0.0	641.999
21.00	0.0	0.0	641.999
22.00	0.0	0.0	641.999
23.00	0.0	0.0	641.999

CHAMBER NO. 4
6-14-79
86 % SUNSHINE
RTI SMOG CHAMBER STUDY
RUN 108 : SO2 DECAY

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C
0.63	0.0	0.0	0.001	0.001	1.393	0.0	0.0			11.226	13.322	15.429	13.644
1.63	0.0	0.0	0.0	0.0		0.0	0.0			11.069	13.184	14.509	13.447
2.63	0.0	0.0	0.0	0.0		0.0	0.0			10.842	12.987	13.539	13.214
3.63	0.0	0.0	0.000	0.000	1.315	0.0	0.0			12.538	14.527	14.006	13.292
4.63	0.0	0.002	0.0	0.002	10.981	0.0	0.0			11.096	13.209	12.060	13.236
5.63	0.0	0.0	0.0	0.0	10.865	0.803	0.798	3.868	0.360	10.060	12.327	12.456	12.861
6.63	0.0	0.0	0.0	0.0	10.877	0.874	0.751		33.000	12.371	14.368	15.435	14.639
7.63	0.004	0.004	0.000	0.004	10.788	0.820	0.641	9.174		15.801	17.943	20.057	17.517
8.63	0.010	0.008	0.001	0.009	10.660	0.734	0.539		32.000	20.095	23.502	24.190	19.783
9.63	0.021	0.015	0.003	0.018	10.578	0.628	0.452	27.585		22.772	27.684	26.856	21.553
10.63	0.036	0.016	0.003	0.020	10.552	0.509			30.000	24.200	30.171	27.883	23.083
11.63	0.051	0.034	0.009	0.043	10.493	0.458		49.160		24.799	31.270	27.678	24.103
12.63	0.061				10.437	0.389		59.513	8.000	25.317	32.248	28.448	24.589
13.63	0.073				10.355	0.373				25.057	31.753	29.424	25.267
14.63	0.084				10.211	0.303			8.000	25.664	32.919	29.424	25.442
15.63	0.087				10.212	0.270		56.478		25.293	32.202	28.639	25.694
16.63	0.085	0.014	0.002	0.016	10.095	0.248			5.000	24.575	30.856	27.030	24.811
17.63	0.075	0.010	0.003	0.013	9.856	0.236		47.474		22.445	27.145	24.035	23.786

TIME (EST)	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	0.0	0.0	0.0
1.63	0.0	0.0	0.0
2.63	0.0	0.0	0.0
3.63	0.0	0.0	0.0
4.63	0.0	0.0	0.0
5.63	0.002	0.036	1.361
6.63	0.009	0.202	9.796
7.63	0.021	0.471	32.084
8.63	0.033	0.689	68.584
9.63	0.048	1.011	122.096
10.63	0.060	1.217	190.542
11.63	0.067	1.343	268.325
12.63	0.062	1.196	343.348
13.63	0.063	1.276	418.132
14.63	0.054	1.099	488.001
15.63	0.043	0.918	547.099
16.63	0.026	0.541	587.928
17.63	0.017	0.375	614.114
18.00	0.010	0.305	622.439
19.00	0.001	0.021	640.739
20.00	0.0	0.0	641.999
21.00	0.0	0.0	641.999
22.00	0.0	0.0	641.999
23.00	0.0	0.0	641.999

CHAMBER NO. 1
6-26-79

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 114 : CUS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SOL PPM	CUS PPM	CUS-P PPM	SO2-M PPM	T-P-S UG/M3	CH-S N-CH/CM3	DEWPT DEG C	H2O K-PPM
0.13	0.001	0.002	0.002	0.004		0.0	0.0					10.668	12.837
1.13	0.001	0.003	0.002	0.005		0.0	0.0					10.164	12.415
2.13	0.000	0.001	0.002	0.003	1.230	0.0	0.0					9.717	12.046
3.13	0.000	0.001	0.003	0.004	1.173	0.0	0.0					9.058	11.524
4.13	0.000	0.001	0.002	0.003	1.096	0.531	0.616					8.478	11.041
5.13	0.000	0.001	0.002	0.004	10.841	0.904	1.114	0.965	0.0	4.546	0.0	7.491	10.361
6.13	0.001	0.001	0.001	0.002		0.909	1.108				0.210	8.760	11.295
7.13	0.004	0.003	0.001	0.004	10.719	0.963	1.103	1.180	0.0	2.246		11.948	13.972
8.13	0.010	0.005	0.001	0.005	10.647	0.965	1.098					14.328	16.319
9.13	0.020	0.004	0.001	0.005	10.606	0.927	1.095				2.700	14.694	16.706
10.13	0.029	0.003	0.003	0.006	10.556	0.796	1.089					14.841	16.863
11.13	0.044	0.003	0.004	0.007	10.581	0.787	1.081				1.500	14.914	16.941
12.13	0.059	0.004	0.003	0.007	10.286	0.776	1.076	1.015	0.0	4.875		14.988	17.021
13.13	0.072	0.003	0.005	0.008	10.198	0.783	1.065				0.900	14.986	17.020
14.13	0.083	0.003	0.005	0.008	10.073	0.821	1.054			4.503		15.135	17.182
15.13	0.090	0.003	0.004	0.007	9.831	0.769	1.044	0.525	0.0		0.620	15.209	17.264
16.13	0.093	0.003	0.005	0.007		0.753	1.033				0.520	15.209	17.267

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	14.191	12.197	0.0	0.0	0.0
1.13	13.813	11.844	0.0	0.0	0.0
2.13	13.370	11.153	0.0	0.0	0.0
3.13	12.927	10.300	0.0	0.0	0.0
4.13	11.808	9.561	0.0	0.0	0.0
5.13	10.346	9.542	0.002	0.031	0.242
6.13	11.259	12.089	0.010	0.248	3.798
7.13	17.185	15.175	0.023	0.524	20.821
8.13	22.438	17.611	0.038	0.809	54.490
9.13	25.600	19.142	0.051	1.063	105.011
10.13	27.479	20.472	0.063	1.254	170.281
11.13	30.295	21.722	0.070	1.365	246.387
12.13	30.508	22.636	0.075	1.445	328.910
13.13	31.731	23.397	0.080	1.283	414.347
14.13	31.731	23.406	0.053	1.025	489.314
15.13	31.194	23.647	0.040	0.802	549.075
16.13	28.382	23.439	0.034	0.725	596.598
17.00		23.281	0.022	0.491	634.439
18.00		23.089	0.009	0.217	663.899
19.00		20.361	0.002	0.025	676.919
20.00		17.808	0.0	0.0	678.418
21.00		16.517	0.0	0.0	678.418
22.00		15.889	0.0	0.0	678.418
23.00		15.225	0.0	0.0	678.418

CHAMBER NO. 2
6-26-79

97 % SUNSHINE

RIT SMOG CHAMBER STUDY
RUN 114 : CLS

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SOL PPM	COS PPM	COS-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.30	0.001	0.001	0.001	0.003		0.0	0.0					10.384	12.597
1.30	0.001	0.002	0.001	0.003		0.0	0.0					10.019	12.293
2.30	0.001	0.000	0.002	0.002	1.235	0.0	0.0					9.571	11.929
3.30	0.000	0.000	0.002	0.002	1.150	0.0	0.0					9.125	11.576
4.30	0.001	0.001	0.002	0.003	1.100	0.914	1.122					8.267	10.923
5.30	0.001	0.001	0.000	0.002	10.760	0.958	1.116	1.135	0.0	3.052	0.0	7.350	10.262
6.30	0.001	0.002	0.001	0.003		0.980	1.111				0.0	9.466	11.845
7.30	0.003	0.003	0.001	0.004	10.744	1.010	1.100	1.200	0.0	2.391		12.377	14.372
8.30	0.010	0.004	0.001	0.005	10.666	0.968	1.103					14.037	16.014
9.30	0.021	0.004	0.001	0.005	10.674	0.871	1.095				2.300	14.255	16.240
10.30	0.032	0.004	0.003	0.007	10.592	0.814	1.100					14.255	16.239
11.30	0.047	0.004	0.002	0.007	10.522	0.801	1.092				1.500	14.401	16.392
12.30	0.061	0.003	0.003	0.006	10.385	0.798	1.081	1.175	0.0	2.635		14.401	16.391
13.30	0.074	0.003	0.004	0.007	10.370	0.810	1.079				0.620	14.474	16.469
14.30	0.084	0.003	0.003	0.006	10.256	0.811	1.071			4.074		14.548	16.547
15.30	0.091	0.003	0.003	0.006	10.173	0.813	1.076	0.950	0.0		0.520	14.548	16.547
16.30	0.093	0.003	0.003	0.006		0.780	1.063				0.520	14.694	16.704

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	13.766	12.197	0.0	0.0	0.0
1.30	13.225	11.844	0.0	0.0	0.0
2.30	12.676	11.153	0.0	0.0	0.0
3.30	12.127	10.300	0.0	0.0	0.0
4.30	11.175	9.561	0.0	0.0	0.0
5.30	10.085	9.542	0.002	0.031	0.558
6.30	12.477	12.089	0.010	0.248	6.324
7.30	17.446	15.175	0.023	0.524	26.172
8.30	21.167	17.611	0.038	0.809	62.742
9.30	24.117	19.142	0.051	1.063	115.854
10.30	25.884	20.472	0.063	1.254	183.072
11.30	27.106	21.722	0.070	1.365	260.310
12.30	27.851	22.636	0.075	1.445	343.649
13.30	28.382	23.397	0.066	1.283	427.433
14.30	28.169	23.486	0.053	1.025	499.769
15.30	27.425	23.647	0.040	0.802	557.255
16.30	28.010	23.839	0.034	0.725	603.989
17.00		23.881	0.022	0.491	634.439
18.00		23.089	0.009	0.217	663.899
19.00		20.361	0.002	0.025	676.919
20.00		17.808	0.0	0.0	678.418
21.00		16.517	0.0	0.0	678.418
22.00		15.869	0.0	0.0	678.418
23.00		15.225	0.0	0.0	678.418

CHAMBER NO. 3
6-26-79

97 % SUNSHINE

RTI SPEC CHAMBER STUDY
RUN 119 : COS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	COS PPM	COS-P PPM	SC2-R PPM	T-P-S UG/M3	CN-S N-CN/LM3	DEWPT DEG C	H2O N-PPM
0.47	0.003	0.001	0.001	0.002		0.0	0.0					10.101	12.360
1.47	0.002	0.002	0.002	0.004	1.117	0.0	0.0					9.732	12.058
2.47	0.001	0.001	0.001	0.002	1.072	0.0	0.0					9.285	11.701
3.47	0.001	0.001	0.001	0.002	0.983	0.0	0.0					8.839	11.354
4.47	0.001	0.001	0.001	0.003	0.971	0.896	1.176					7.914	10.668
5.47	0.001	0.001	0.001	0.002	10.639	0.946	1.165	1.140	0.0	3.854	0.0	7.562	10.411
6.47	0.001	0.001	0.000	0.001		1.008	1.151				0.580	10.031	12.303
7.47	0.005	0.004	0.001	0.004	10.572	1.010	1.151	1.245	0.0	2.732		13.240	15.207
8.47	0.012	0.005	0.001	0.006	10.479	0.900	1.149					15.135	17.191
9.47	0.023	0.004	0.002	0.006	10.506	0.834	1.149				2.700	15.282	17.352
10.47	0.034	0.004	0.003	0.007	10.456	0.853	1.146					15.282	17.350
11.47	0.051	0.004	0.003	0.007	10.457	0.850	1.143				1.100	15.430	17.515
12.47	0.065	0.003	0.005	0.008	10.205	0.829	1.135	1.195	0.0	3.378		15.430	17.514
13.47	0.077	0.004	0.004	0.008	10.271	0.845	1.132				0.410	15.430	17.514
14.47	0.088	0.003	0.004	0.007	10.170	0.821	1.124			3.983		15.504	17.596
15.47	0.095	0.004	0.003	0.007		0.814	1.124	1.115	0.0		0.360	15.652	17.766
16.47	0.098	0.003	0.004	0.007		0.806	1.122				0.360	15.652	17.765

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	14.297	12.197	0.0	0.0	0.0
1.47	13.913	11.844	0.0	0.0	0.0
2.47	13.630	11.153	0.0	0.0	0.0
3.47	12.921	10.300	0.0	0.0	0.0
4.47	11.658	9.561	0.0	0.0	0.0
5.47	10.568	9.542	0.002	0.031	0.874
6.47	12.526	12.089	0.010	0.248	8.854
7.47	18.027	15.175	0.023	0.524	31.517
8.47	22.126	17.611	0.036	0.809	70.994
9.47	25.131	19.142	0.051	1.063	126.696
10.47	26.681	20.472	0.063	1.254	195.863
11.47	27.000	21.722	0.070	1.365	274.233
12.47	28.648	22.636	0.075	1.445	358.388
13.47	28.754	23.397	0.066	1.263	440.520
14.47	30.030	23.486	0.053	1.025	510.224
15.47	27.638	23.647	0.040	0.802	565.436
16.47	28.914	23.839	0.034	0.725	611.384
17.00		23.881	0.022	0.491	634.439
18.00		23.089	0.009	0.217	663.899
19.00		20.361	0.002	0.025	676.919
20.00		17.808	0.0	0.0	678.418
21.00		16.517	0.0	0.0	678.418
22.00		15.889	0.0	0.0	678.418
23.00		15.225	0.0	0.0	678.418

CHAMBER NO. 4
6-26-79

97 % SUNSHINE

RII SMOG CHAMBER STUDY
RUN 114 : CUS

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOx PPM	CH4 PPM	T-SUL PPM	CUS PPM	CUS-m PPM	SO2-4 PPM	T-P-S UG/M3	CA-S K-CAL/GM3	DEWPT DEG C	H2O K-PPM
												10.514	12.536
0.63	0.001	0.001	0.001	0.002		0.0	0.0					9.728	12.055
1.63	0.001	0.002	0.001	0.003	1.341	0.0	0.0					9.423	11.810
2.63	0.000	0.001	0.001	0.002	1.316	0.0	0.0					8.764	11.297
3.63	0.000	0.001	0.002	0.002	1.260	0.0	0.0					7.773	10.562
4.63	0.000	0.001	0.001	0.002	10.908	0.927	1.170					8.055	10.767
5.63	0.000	0.001	0.001	0.002	10.829	0.934	1.157	1.220	0.0	4.647	0.0	10.243	12.479
6.63	0.001	0.002	0.001	0.003		1.018	1.157				0.0	14.182	16.168
7.63	0.005	0.004	0.001	0.005	10.715	0.950	1.159	1.265	0.0	5.725		17.551	20.025
8.63	0.013	0.007	0.001	0.008		0.844	1.149					18.683	21.526
9.63	0.025	0.008	0.001	0.009	10.683	0.868	1.151				2.700	18.761	21.629
10.63	0.039	0.008	0.002	0.009	10.519	0.877	1.149					18.916	21.839
11.63	0.056	0.007	0.003	0.011	10.515	0.887	1.143				1.600	18.994	21.945
12.63	0.077	0.008	0.004	0.012	10.424	0.845	1.138	1.285	0.0	5.578		18.998	21.948
13.63	0.085	0.007	0.004	0.011	10.557						0.750	19.072	22.049
14.63	0.097	0.006	0.004	0.010	10.291	0.830	1.124			5.952		19.072	22.051
15.63	0.102	0.006	0.003	0.010		0.810	1.111	0.950	0.0		0.620	19.072	22.051
16.63	0.105	0.005	0.005	0.010		0.796	1.116				0.520		

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	14.829	12.197	0.0	0.0	0.0
1.63	14.442	11.844	0.0	0.0	0.0
2.63	13.994	11.155	0.0	0.0	0.0
3.63	13.397	10.300	0.0	0.0	0.0
4.63	11.768	9.561	0.0	0.0	0.0
5.63	11.104	9.542	0.002	0.031	1.172
6.63	12.787	12.089	0.010	0.248	11.234
7.63	18.607	15.175	0.023	0.524	36.547
8.63	22.504	17.611	0.038	0.809	78.760
9.63	25.082	19.142	0.051	1.063	136.901
10.63	26.734	20.472	0.065	1.254	207.901
11.63	27.266	21.722	0.070	1.365	287.337
12.63	28.010	22.636	0.075	1.445	372.260
13.63	29.073	23.397	0.066	1.283	452.837
14.63	29.977	23.486	0.053	1.025	520.064
15.63	28.754	23.647	0.040	0.802	573.135
16.63	26.223	23.839	0.034	0.725	618.344
17.00		23.881	0.022	0.491	634.439
18.00		23.089	0.009	0.217	663.899
19.00		20.361	0.002	0.025	676.919
20.00		17.808	0.0	0.0	678.418
21.00		16.517	0.0	0.0	678.418
22.00		15.889	0.0	0.0	678.418
23.00		15.225	0.0	0.0	678.418

CHAMBER NO. 1
6-27-79

88 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 115 : H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.13	0.001	0.0	0.002	0.002	0.0	0.0	0.0					13.384	15.352
1.13	0.001	0.0	0.002	0.002	0.0	0.0	0.0					12.879	14.855
2.13	0.000	0.0	0.001	0.001	0.0	0.0	0.0					12.449	14.441
3.13	0.000	0.0	0.002	0.002	0.0	0.0	0.0					12.736	14.716
4.13	0.000	0.001	0.001	0.002	0.0	0.0	0.0					12.377	14.374
5.13	0.001	0.003	0.0	0.003	0.765	0.0	0.960	1.205	0.0	5.871	0.0	11.591	13.649
6.13	0.001	0.004	0.0	0.004	0.778	0.0	0.903				3.800	12.449	14.442
7.13	0.002	0.004	0.001	0.005	0.740	0.0	0.855					14.853	16.684
8.13	0.003	0.005	0.001	0.005	0.706	0.0	0.819	1.005	0.0	5.017		15.332	17.407
9.13	0.002	0.007	0.0	0.007	0.651	0.009	0.783				4.500	15.356	17.432
10.13	0.002	0.007	0.001	0.008	0.626	0.014	0.750					15.504	17.598
11.13	0.002	0.010	0.0	0.010	0.607	0.036	0.718			6.113	5.000	15.504	17.596
12.13	0.002	0.010	0.000	0.011	0.579	0.045	0.680	0.825	0.050		3.800	15.504	17.593
13.13	0.002	0.012	0.001	0.012	0.563	0.054	0.645					15.652	17.763
14.13	0.002	0.012	0.001	0.013	0.543	0.064	0.615			4.267	3.100	15.652	17.762
15.13	0.001	0.012	0.001	0.014	0.531	0.073	0.588	0.620	0.080			15.652	17.765
16.13	0.001	0.012	0.001	0.014	0.521	0.095	0.567				2.500	15.727	17.846
17.13	0.001	0.013	0.001	0.015	0.502	0.082	0.542				2.300	15.727	17.850

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	16.438	14.317	0.0	0.0	0.0
1.13	16.055	13.389	0.0	0.0	0.0
2.13	15.619	12.942	0.0	0.0	0.0
3.13	15.449	12.728	0.0	0.0	0.0
4.13	14.800	12.292	0.0	0.0	0.0
5.13	13.128	12.103	0.002	0.030	0.234
6.13	14.297	13.528	0.008	0.167	3.103
7.13	19.391	16.547	0.024	0.564	16.219
8.13	24.148	19.203	0.036	0.773	51.689
9.13	27.957	21.453	0.052	1.069	100.378
10.13	28.329	22.153	0.062	1.204	165.571
11.13	30.189	23.103	0.071	1.387	239.238
12.13	34.069	24.125	0.067	1.309	321.850
13.13	31.146	24.106	0.058	1.088	398.666
14.13	32.870	24.669	0.053	1.018	463.399
15.13	29.445	25.072	0.045	0.933	523.816
16.13	33.431	25.200	0.033	0.683	577.846
17.13	28.223	24.175	0.018	0.309	615.909
18.00		23.825	0.009	0.175	632.039
19.00		20.825	0.002	0.023	642.539
20.00		17.319	0.0	0.0	643.918
21.00		15.669	0.0	0.0	643.918
22.00		14.650	0.0	0.0	643.918
23.00		13.903	0.0	0.0	643.918

CHAMBER NO. 2
6-27-79

88 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 115 : H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.30	0.001	0.0	0.0	0.0	0.0	0.0	0.0					12.449	14.401
1.30	0.001	0.0	0.001	0.001	0.0	0.0	0.0					12.162	14.172
2.30	0.001	0.0	0.000	0.000	0.0	0.0	0.0					12.019	14.040
3.30	0.001	0.0	0.001	0.001	0.0	0.0	0.0					11.805	13.842
4.30	0.001	0.000	0.0	0.000	0.0	0.0	0.0					11.306	13.394
5.30	0.001	0.003	0.0	0.003	0.791	0.0	0.972	1.250	0.0	2.642	0.0	11.306	13.395
6.30	0.001	0.002	0.0	0.002	0.810	0.0	0.924				2.300	11.662	13.713
7.30	0.002	0.004	0.001	0.004	0.724	0.0	0.880					11.823	13.855
8.30	0.002	0.004	0.0	0.004	0.706	0.0	0.840	1.075	0.0	2.844		11.858	13.885
8.92											3.400		
9.30	0.001	0.005	0.000	0.005	0.679	0.009	0.825					12.091	14.097
10.30	0.001	0.008	0.0	0.008	0.664	0.014	0.794					12.091	14.097
10.83											4.500		
11.30	0.001	0.009	0.000	0.009	0.648	0.036	0.773			4.003		12.234	14.229
12.30	0.000	0.009	0.0	0.009	0.626	0.050	0.735	1.175	0.060		4.200	12.234	14.228
13.30	0.001	0.011	0.000	0.011	0.609	0.054	0.710					12.377	14.364
14.30	0.001	0.012	0.000	0.012	0.597	0.059	0.685			4.287	3.400	12.449	14.430
15.30	0.000	0.013	0.0	0.013	0.585	0.059	0.664	0.850	0.100			12.377	14.363
16.30	0.000	0.013	0.0	0.013	0.578	0.077	0.643				2.600	12.449	14.430
17.30	0.000	0.013	0.0	0.013	0.564	0.073	0.609				2.300	12.520	14.501

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	15.223	14.317	0.0	0.0	0.0
1.30	14.680	13.389	0.0	0.0	0.0
2.30	13.979	12.942	0.0	0.0	0.0
3.30	14.712	12.728	0.0	0.0	0.0
4.30	13.479	12.292	0.0	0.0	0.0
5.30	12.650	12.103	0.002	0.030	0.540
6.30	14.510	13.528	0.008	0.167	4.806
7.30	19.280	16.547	0.024	0.564	21.972
8.30	22.761	19.203	0.036	0.773	59.574
8.92					88.330
9.30	27.106	21.453	0.052	1.069	111.282
10.30	26.150	22.153	0.062	1.204	177.852
10.83					216.139
11.30	28.223	23.103	0.071	1.387	253.386
12.30	29.605	24.125	0.067	1.309	335.201
13.30	28.329	24.106	0.058	1.088	409.763
14.30	29.888	24.669	0.053	1.018	473.743
15.30	29.498	25.072	0.045	0.933	533.333
16.30	30.242	25.200	0.033	0.683	584.813
17.30	26.362	24.175	0.018	0.309	619.061
18.00		23.825	0.009	0.175	632.039
19.00		20.825	0.002	0.023	642.539
20.00		17.319	0.0	0.0	643.918
21.00		15.669	0.0	0.0	643.918
22.00		14.650	0.0	0.0	643.918
23.00		13.903	0.0	0.0	643.918

CHAMBER NO. 3
6-27-79
88 % SUNSHINE
RTI SMOG CHAMBER STUDY
RUN 115 : H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.47	0.002	0.0	0.001	0.001	0.0	0.0	0.0					13.095	15.066
1.47	0.002	0.0	0.001	0.001	0.0	0.0	0.0					12.664	14.646
2.47	0.001	0.0	0.001	0.001	0.0	0.0	0.0					12.305	14.306
3.47	0.000	0.0	0.001	0.001	0.0	0.0	0.0					12.592	14.578
4.47	0.000	0.002	0.0	0.002	0.0	0.0	0.0					12.019	14.040
5.00											0.0		
5.47	0.001	0.004	0.0	0.004	0.809	0.0	0.955	1.240	0.0	3.350		11.662	13.714
6.47	0.001	0.003	0.0	0.003	0.752	0.0	0.897				2.500	13.095	15.067
7.47	0.003	0.004	0.0	0.004	0.699	0.0	0.855					13.843	15.815
8.47	0.002	0.005	0.0	0.005	0.679	0.0	0.825	0.955	0.0	2.707		14.025	16.000
8.92											2.900		
9.47	0.001	0.007	0.0	0.007	0.667	0.009	0.796					14.037	16.009
10.47	0.001	0.008	0.000	0.008	0.648	0.027	0.773					14.037	16.010
10.83											2.700		
11.47	0.001	0.010	0.0	0.010	0.634	0.041	0.743			4.606		14.037	16.007
12.47	0.001	0.011	0.000	0.012	0.602	0.054	0.716	0.885	0.060		2.500	14.110	16.084
13.47	0.000	0.012	0.001	0.012	0.602	0.059	0.695					14.182	16.161
14.00											2.400		
14.47	0.001	0.014	0.0	0.014	0.590	0.068	0.668			5.094		14.255	16.235
15.47	0.000	0.015	0.000	0.015	0.580	0.077	0.640	0.810	0.130			14.255	16.235
16.08											2.300		
16.47	0.000	0.015	0.001	0.015	0.574	0.086	0.630					14.328	16.312
17.47	0.000	0.016	0.0	0.016	0.558	0.082	0.609				2.300	14.401	16.392

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	16.240	14.317	0.0	0.0	0.0
1.47	15.697	13.389	0.0	0.0	0.0
2.47	15.580	12.942	0.0	0.0	0.0
3.47	14.719	12.728	0.0	0.0	0.0
4.47	14.124	12.292	0.0	0.0	0.0
5.00		12.103	0.002	0.030	0.0
5.47	13.234				0.846
6.47	15.095	13.528	0.008	0.167	6.509
7.47	19.754	16.547	0.024	0.564	27.725
8.47	23.342	19.203	0.036	0.773	67.459
8.92					88.330
9.47	27.851	21.453	0.052	1.069	122.186
10.47	26.894	22.153	0.062	1.204	190.133
10.83					216.139
11.47	29.551	23.103	0.071	1.387	267.533
12.47	29.020	24.125	0.067	1.309	348.553
13.47	27.372	24.106	0.058	1.088	420.861
14.00		24.669	0.053	1.018	455.459
14.47	30.839				484.167
15.47	30.349	25.072	0.045	0.933	542.850
16.08		25.200	0.033	0.683	575.797
16.47	30.774				591.779
17.47	26.416	24.175	0.018	0.309	622.212
18.00		23.825	0.009	0.175	632.039
19.00		20.825	0.002	0.023	642.539
20.00		17.319	0.0	0.0	643.918
21.00		15.669	0.0	0.0	643.918
22.00		14.650	0.0	0.0	643.918
23.00		13.903	0.0	0.0	643.918

CHAMBER NO. 4
6-27-79

88 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 115 : H2S

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.63	0.001	0.0	0.001	0.001	0.0	0.0	0.0					13.240	15.208
1.63	0.000	0.0	0.001	0.001	0.0	0.0	0.0					12.807	14.785
2.63	0.001	0.0	0.001	0.001	0.0	0.0	0.0					12.520	14.509
3.63	0.000	0.0	0.000	0.000	0.0	0.0	0.0					12.879	14.856
4.63	0.000	0.003	0.0	0.003	0.814	0.0	1.025					11.948	13.974
5.00											0.0		
5.63	0.001	0.004	0.0	0.004	0.783	0.0	0.962	1.225	0.0	4.589		11.805	13.843
6.63	0.001	0.004	0.003	0.007	0.742	0.0	0.901				1.800	13.674	15.645
7.63	0.003	0.005	0.0	0.005	0.706	0.0	0.857					14.724	16.743
8.63	0.001	0.006	0.001	0.007	0.679	0.0	0.819	0.965	0.0	3.445	2.700	14.981	17.021
9.63	0.001	0.006	0.001	0.007	0.668	0.014	0.783					15.135	17.187
10.63	0.001	0.008	0.001	0.010	0.645	0.036	0.756				2.900	15.283	17.350
11.63	0.001	0.011	0.000	0.011	0.624	0.054	0.720			6.719		15.356	17.431
12.25											2.700		
12.63	0.001	0.012	0.0	0.012	0.605	0.064	0.693	0.830	0.070			15.356	17.431
13.63	0.001	0.013	0.0	0.013	0.590	0.068	0.664					15.504	17.597
14.00											2.300		
14.63	0.000	0.014	0.001	0.015	0.576	0.091	0.634			5.912		15.504	17.596
15.63	0.000	0.015	0.000	0.016	0.564	0.091	0.613	0.740	0.135			15.578	17.680
16.08											2.300		
16.63	0.000	0.016	0.0	0.016	0.553	0.100	0.596					15.504	17.596
17.17											2.100		
17.63	0.000	0.016	0.000	0.016	0.537	0.104	0.571					15.504	17.599

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	16.512	14.317	0.0	0.0	0.0
1.63	16.023	13.389	0.0	0.0	0.0
2.63	15.321	12.942	0.0	0.0	0.0
3.63	14.832	12.728	0.0	0.0	0.0
4.63	14.343	12.292	0.0	0.0	0.0
5.00		12.103	0.002	0.030	0.0
5.63	13.978				1.134
6.63	15.626	13.528	0.008	0.167	8.113
7.63	20.334	16.547	0.024	0.564	33.139
8.63	23.018	19.203	0.036	0.773	74.879
9.63	26.734	21.453	0.052	1.069	132.448
10.63	26.894	22.153	0.062	1.204	201.691
11.63	29.126	23.103	0.071	1.387	280.848
12.25		24.125	0.067	1.309	331.274
12.63	28.488				361.120
13.63	28.754	24.106	0.058	1.088	431.306
14.00		24.669	0.053	1.018	455.459
14.63	30.089				493.939
15.63	30.083	25.072	0.045	0.933	551.806
16.08		25.200	0.033	0.683	575.797
16.63	30.295				598.336
17.17		24.175	0.018	0.309	616.651
17.63	27.106				625.179
18.00		23.825	0.009	0.175	632.039
19.00		20.825	0.002	0.023	642.539
20.00		17.319	0.0	0.0	643.918
21.00		15.669	0.0	0.0	643.918
22.00		14.650	0.0	0.0	643.918
23.00		13.903	0.0	0.0	643.918

CHAMBER NO. 1
6-28-79

87 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 116 : CH3SH

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	T-SOL PPM	SO2 PPM	COS PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-UG/CM3	DEWPT DEG C	H2O K-PPM
0.13	0.000	0.001	0.002	0.003	0.0	0.0	0.0					13.636	15.606
1.13	0.000	0.001	0.001	0.002	0.0	0.0	0.0					13.411	15.380
2.13	0.000	0.0	0.001	0.001	0.0	0.0	0.0					12.827	14.804
3.13	0.000	0.001	0.000	0.002	0.0	0.0	0.0					12.461	14.453
4.13	0.000	0.001	0.001	0.002	0.0	0.0	0.0					12.024	14.044
5.13	0.0	0.016	0.0	0.016	0.931	0.0	0.0	1.485	0.0	4.201	0.210	10.892	13.031
6.13	0.001	0.015	0.0	0.015	0.953	0.0	0.0				1.600	11.496	13.563
7.13	0.003	0.017	0.0	0.017	0.972	0.0	0.0	1.490	0.0	6.450		14.535	16.542
8.13	0.010	0.018	0.0	0.018	0.963	0.009	0.003				1.200	16.950	19.280
9.13	0.022	0.018	0.0	0.018	0.940	0.023	0.003					17.233	19.645
10.13	0.036	0.017	0.0	0.017	0.886	0.064	0.003	0.835	0.165	7.696	1.200	17.252	19.666
11.13	0.053	0.015	0.0	0.015	0.823	0.109	0.0					17.423	19.879
12.13	0.066	0.015	0.0	0.015	0.757	0.159	0.003				2.600	17.518	19.998
13.13	0.076	0.014	0.0	0.014	0.726	0.182	0.003	0.555	0.230	7.943		17.303	19.726
14.13	0.086	0.014	0.0	0.014	0.668	0.209	0.0					17.000	19.352
15.13	0.091	0.014	0.0	0.014				0.415	0.250	5.840	0.620	16.473	18.714
16.13	0.089	0.013	0.0	0.013	0.513	0.213	0.0			5.390	0.360	15.801	17.930

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	16.158	13.192	0.0	0.0	0.0
1.13	15.892	12.658	0.0	0.0	0.0
2.13	15.254	12.300	0.0	0.0	0.0
3.13	15.041	11.867	0.0	0.0	0.0
4.13	14.616	11.125	0.0	0.0	0.0
5.13	12.685	10.922	0.002	0.037	0.289
6.13	13.746	13.261	0.009	0.201	3.788
7.13	18.089	16.494	0.019	0.404	17.431
8.13	46.577	19.456	0.035	0.764	44.479
9.13	29.281	21.781	0.047	0.974	91.957
10.13	31.553	23.403	0.058	1.193	152.105
11.13	32.284	24.694	0.059	1.162	223.443
12.13	33.547	25.933	0.053	1.003	291.923
13.13	35.238	26.144	0.066	1.338	354.716
14.13	35.026	27.014	0.055	1.219	434.067
15.13	36.461	27.444	0.035	0.666	502.894
16.13	34.494	27.722	0.029	0.687	543.017
17.00		27.178	0.017	0.404	578.879
18.00		26.175	0.008	0.156	603.119
19.00		23.367	0.001	0.015	612.479
20.00		20.964	0.0	0.0	613.379
21.00		19.708	0.0	0.0	613.379
22.00		18.389	0.0	0.0	613.379
23.00		17.433	0.0	0.0	613.379

CHAMBER NO. 2
6-28-79

87 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 116 : CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SOL PPM	SO2 PPM	COS PPM	MMBR-M PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.30	0.000	0.001	0.001	0.002	0.0	0.0	0.0					11.961	14.003
1.30	0.000	0.000	0.001	0.001	0.0	0.0	0.0					11.545	13.607
2.30	0.000	0.0	0.001	0.001	0.0	0.0	0.0					11.254	13.347
3.30	0.000	0.0	0.001	0.001	0.0	0.0	0.0					11.104	13.215
4.30	0.000	0.000	0.000	0.001	0.0	0.0	0.0					10.955	13.085
5.30	0.0	0.015	0.0	0.015	0.985	0.0	0.0	1.695	0.0	3.522	0.0	10.544	12.732
6.30	0.000	0.015	0.0	0.015	1.061	0.0	0.0				0.750	10.721	12.882
7.30	0.001	0.017	0.0	0.017	1.076	0.0	0.0	1.660	0.0	3.844		10.792	12.940
8.30	0.007	0.017	0.0	0.017	1.064	0.009	0.0				0.900	10.756	12.906
9.30	0.020	0.018	0.0	0.018	1.033	0.027	0.003					10.960	13.080
10.30	0.036	0.016	0.0	0.016	0.968	0.077	0.0	0.930	0.195	5.567	0.460	10.978	13.094
11.30	0.051	0.014	0.0	0.014	0.867	0.127	0.003					11.067	13.171
12.30	0.065	0.014	0.0	0.014	0.845	0.173	0.0				1.400	11.155	13.249
13.30	0.078	0.014	0.0	0.014	0.794	0.209	0.0	0.750	0.330	6.499		11.022	13.131
14.30	0.089	0.013	0.0	0.013	0.699	0.241	0.0					10.738	12.885
15.30	0.094	0.014	0.0	0.014				0.505	0.350	6.760	0.280	10.031	12.290
16.30	0.094	0.013	0.0	0.013	0.605	0.286	0.0			4.939	0.0	9.536	11.889

TIME (EST)	DTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	15.095	13.192	0.0	0.0	0.0
1.30	14.457	12.658	0.0	0.0	0.0
2.30	13.925	12.300	0.0	0.0	0.0
3.30	13.978	11.867	0.0	0.0	0.0
4.30	12.915	11.125	0.0	0.0	0.0
5.30	11.932	10.922	0.002	0.037	0.666
6.30	13.792	13.261	0.009	0.201	5.838
7.30	18.204	16.494	0.019	0.404	21.552
8.30	23.359	19.456	0.035	0.764	52.272
9.30	27.259	21.781	0.047	0.974	101.892
10.30	29.372	23.403	0.058	1.193	164.274
11.30	30.103	24.694	0.059	1.162	235.296
12.30	30.621	25.933	0.053	1.003	302.153
13.30	32.103	26.144	0.066	1.338	368.363
14.30	32.794	27.014	0.055	1.219	446.501
15.30	33.112	27.444	0.035	0.666	509.687
16.30	32.049	27.722	0.029	0.687	550.024
17.00		27.178	0.017	0.404	578.879
18.00		26.175	0.008	0.156	603.119
19.00		23.367	0.001	0.015	612.479
20.00		20.964	0.0	0.0	613.379
21.00		19.708	0.0	0.0	613.379
22.00		18.389	0.0	0.0	613.379
23.00		17.433	0.0	0.0	613.379

CHAMBER NO. 3
6-28-79

87 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 116 : CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SUL PPM	SO2 PPM	COS PPM	PPENE-X PPM	SO2-M PPM	T-P-S UG/M3	CA-S N-CM/CM3	DEWPT DEG C	H2O X-PPM
0.47	0.001	0.001	0.003	0.004	0.0	0.0	0.0					13.272	15.240
1.47	0.000	0.0	0.002	0.002	0.0	0.0	0.0					12.760	14.739
2.47	0.000	0.0	0.002	0.002	0.0	0.0	0.0					12.251	14.255
3.47	0.000	0.0	0.002	0.002	0.0	0.0	0.0					12.243	14.248
4.47	0.000	0.016	0.0	0.016	0.895	0.0	0.0					11.304	13.396
5.47	0.0	0.016	0.0	0.016	0.996	0.0	0.0	1.570	0.0	4.637	0.0	10.620	12.797
6.47	0.000	0.016	0.0	0.016	1.099	0.0	0.0				0.900	12.293	14.295
7.47	0.002	0.018	0.0	0.018	1.089	0.0	0.0	1.610	0.0	2.931		15.702	17.830
8.47	0.009	0.018	0.0	0.018	1.066	0.014	0.003				0.810	17.467	19.942
9.47	0.022	0.018	0.0	0.018	1.044	0.050	0.003					17.696	20.230
10.47	0.041	0.017	0.0	0.017	1.008	0.104	0.0	0.930	0.190	6.629	0.750	17.715	20.251
11.47	0.059	0.016	0.0	0.016	0.936	0.163	0.0					17.734	20.275
12.47	0.071	0.016	0.0	0.016	0.895	0.227	0.003				1.500	17.753	20.300
13.47	0.088	0.015	0.0	0.015	0.846	0.259	0.003	0.600	0.310	7.427		17.607	20.111
14.47	0.100	0.016	0.0	0.016	0.764	0.336	0.0					17.303	19.727
15.47	0.103	0.013	0.0	0.013				0.480	0.345	7.991	0.520	16.398	18.628
16.47	0.100	0.013	0.0	0.013	0.607	0.336	0.0			7.496	0.210	16.024	18.189

TIME (EST)	LTEMP DEG C	TEMP DEG C	UV L/MIN	SH L/MIN	CU-SH LANG
0.47	16.104	13.142	0.0	0.0	0.0
1.47	15.679	12.658	0.0	0.0	0.0
2.47	15.413	12.300	0.0	0.0	0.0
3.47	14.988	11.867	0.0	0.0	0.0
4.47	13.925	11.125	0.0	0.0	0.0
5.47	12.561	10.922	0.002	0.037	1.043
6.47	14.421	13.261	0.009	0.201	7.888
7.47	18.904	16.494	0.019	0.404	25.673
8.47	24.965	19.456	0.035	0.764	60.065
9.47	27.310	21.781	0.047	0.974	111.827
10.47	30.858	23.403	0.058	1.193	176.442
11.47	30.791	24.694	0.059	1.162	247.148
12.47	30.725	25.933	0.053	1.003	312.384
13.47	32.687	26.144	0.066	1.338	382.011
14.47	34.069	27.014	0.055	1.219	458.935
15.47	32.528	27.444	0.035	0.666	516.480
16.47	32.581	27.722	0.029	0.687	557.032
17.00		27.178	0.017	0.404	578.879
18.00		26.175	0.006	0.156	603.119
19.00		23.367	0.001	0.015	612.479
20.00		20.964	0.0	0.0	613.379
21.00		19.706	0.0	0.0	613.379
22.00		18.389	0.0	0.0	613.379
23.00		17.433	0.0	0.0	613.379

CHAMBER NO. 4
6-28-79

87 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 116 : CH3SH

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	T-SOL PPM	SO2 PPM	COS PPM	MMER-N PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.63	0.000	0.001	0.002	0.003	0.0	0.0	0.0					13.270	15.239
1.63	0.000	0.0	0.001	0.001	0.0	0.0	0.0					12.975	14.948
2.63	0.000	0.0	0.001	0.001	0.0	0.0	0.0					12.536	14.524
3.63	0.000	0.0	0.000	0.000	0.0	0.0	0.0					12.457	14.449
4.63	0.000	0.016	0.0	0.016	0.991	0.0	0.0					11.165	13.269
5.63	0.0	0.015	0.0	0.015	1.003	0.0	0.0	1.585	0.0	5.228	0.0	10.768	12.923
6.63	0.001	0.016	0.0	0.016	1.089	0.0	0.0				0.690	12.442	14.436
7.63	0.003	0.018	0.0	0.018	1.072	0.0	0.0	1.615	0.0	6.361		16.068	18.252
8.63	0.013	0.018	0.0	0.018	1.053	0.014	0.003				0.810	17.690	20.224
9.63	0.029	0.019	0.0	0.019	1.030	0.054	0.003					17.776	20.330
10.63	0.050	0.018	0.0	0.018	1.002	0.109	0.003	0.895	0.210	10.215	0.810	17.948	20.550
11.63	0.068	0.016	0.0	0.016	0.945	0.163	0.003					17.967	20.574
12.63	0.082	0.016	0.0	0.016	0.907	0.209	0.003				2.400	17.986	20.599
13.63	0.100	0.015	0.0	0.015	0.834	0.254	0.003	0.605	0.300	7.414		17.760	20.306
14.63	0.112	0.013	0.0	0.013	0.721	0.277	0.0					17.379	19.823
15.63	0.113	0.014	0.0	0.014				0.475	0.320	8.691	0.280	16.473	18.717
16.63	0.109	0.014	0.0	0.014	0.591	0.309	0.0			7.535	0.210	16.323	18.540

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63	16.423	13.192	0.0	0.0	0.0
1.63	15.998	12.658	0.0	0.0	0.0
2.63	15.573	12.300	0.0	0.0	0.0
3.63	15.413	11.867	0.0	0.0	0.0
4.63	14.350	11.125	0.0	0.0	0.0
5.63	13.084	10.922	0.002	0.037	1.399
6.63	14.997	13.261	0.009	0.201	9.818
7.63	19.922	16.494	0.019	0.404	29.551
8.63	25.556	19.456	0.035	0.764	67.399
9.63	28.265	21.781	0.047	0.974	121.177
10.63	30.484	23.403	0.058	1.193	187.895
11.63	30.843	24.694	0.059	1.162	258.303
12.63	30.670	25.933	0.053	1.003	322.013
13.63	32.421	26.144	0.066	1.338	394.855
14.63	33.644	27.014	0.055	1.219	470.637
15.63	32.475	27.444	0.035	0.666	522.874
16.63	31.624	27.722	0.029	0.687	563.627
17.00		27.178	0.017	0.404	578.879
18.00		26.175	0.008	0.156	603.119
19.00		23.367	0.001	0.015	612.479
20.00		20.964	0.0	0.0	613.379
21.00		19.708	0.0	0.0	613.379
22.00		18.389	0.0	0.0	613.379
23.00		17.433	0.0	0.0	613.379

CHAMBER NO. 1
6-29-79

23 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 117 : MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	SO2-M PPM	MMER-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM
0.13	0.000	0.0	0.002	0.002		0.0	0.0					15.135	17.193
1.13	0.0	0.0	0.003	0.003		0.0	0.0					14.694	16.712
2.13	0.0	0.0	0.002	0.002		0.0	0.0					14.255	16.245
3.13	0.0	0.0	0.002	0.002		0.0	0.0					13.819	15.792
4.13	0.0	0.0	0.002	0.002		0.0	0.0				0.0	13.312	15.280
5.13	0.0	0.015	0.0	0.015		0.985	0.0	0.0	1.115	4.060	2.500	12.867	14.843
6.13	0.001	0.017	0.0	0.017		0.994	0.0			3.133		13.264	15.232
7.13	0.003	0.017	0.0	0.017		0.983	0.0	0.0	1.110		4.000	15.430	17.521
8.13	0.012	0.019	0.0	0.019		0.972	0.009					16.398	18.634
9.13	0.025	0.018	0.0	0.018		0.949	0.036			5.512		16.623	18.900
10.13	0.041	0.016	0.0	0.016		0.909	0.077		0.650		4.500	16.774	19.078
11.13	0.061	0.016	0.0	0.016	9.996	0.819	0.127		0.570	7.192		16.774	19.077
12.13	0.076	0.016	0.0	0.016	9.666	0.740	0.177				1.300	16.774	19.076
13.13	0.084	0.014	0.0	0.014	9.180	0.713	0.191	0.345	0.525	9.079		16.774	19.077
14.13	0.091	0.015	0.0	0.015	8.735	0.729	0.213				0.900	16.774	19.077
15.13	0.090	0.013	0.0	0.013		0.626	0.232	0.370	0.425	5.160		16.774	19.077
16.13	0.083	0.013	0.0	0.013	8.665	0.585	0.204			6.294		16.398	18.629
17.17											0.460		

TIME (EST)	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13	19.436	16.578	0.0	0.0	0.0
1.13	19.003	15.869	0.0	0.0	0.0
2.13	18.198	15.236	0.0	0.0	0.0
3.13	17.818	14.772	0.0	0.0	0.0
4.13	17.332	14.367	0.0	0.0	0.0
5.13	16.317	14.467	0.002	0.043	0.335
6.13	16.583	16.456	0.008	0.153	3.773
7.13	21.261	19.581	0.020	0.447	15.247
8.13	26.310	22.111	0.032	0.676	43.853
9.13	28.915	24.100	0.041	0.850	85.770
10.13	32.138	25.797	0.054	1.125	138.915
11.13	33.680	26.522	0.054	1.006	205.487
12.13	35.008	27.547	0.053	1.048	266.174
13.13	33.361	28.444	0.055	1.162	329.943
14.13	34.052	28.319	0.042	0.829	397.065
15.13	33.998	27.769	0.028	0.517	444.372
16.13	31.197	27.422	0.022	0.420	474.635
17.17		27.136	0.015	0.308	499.700
18.00		25.372	0.006	0.078	515.039
19.00		23.461	0.001	0.008	519.719
20.00		22.758	0.0	0.0	520.199
21.00		22.825	0.0	0.0	520.199
22.00		22.222	0.0	0.0	520.199
23.00		21.306	0.0	0.0	520.199

CHAMBER NO. 2
6-29-79

23 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 117 : MULTISULFUR

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C
0.30	0.000	0.0	0.001	0.001		0.0	0.0				14.988	17.031	19.329
1.30	0.0	0.0	0.001	0.001		0.0	0.0				14.548	16.555	18.471
2.30	0.0	0.0	0.000	0.000		0.0	0.0				14.037	16.017	17.931
3.30	0.0	0.0	0.002	0.002		0.0	0.0				13.674	15.644	16.807
4.30	0.0	0.0	0.002	0.002		0.0	0.0			2.600	13.168	15.137	16.534
5.30	0.0	0.002	0.002	0.004		0.819	0.940	0.995	3.940	4.500	12.861	14.837	15.786
6.30	0.002	0.002	0.003	0.005		0.769	0.808		9.841		13.547	15.516	16.742
7.30	0.007	0.004	0.003	0.007		0.718	0.758	0.785		5.700	16.323	18.550	21.154
8.30	0.017	0.006	0.003	0.009		0.672	0.713				18.451	21.215	24.874
9.30	0.030	0.006	0.004	0.010		0.625	0.704		28.461		18.761	21.628	27.160
10.30	0.046	0.005	0.004	0.009	9.416	0.545	0.636	0.625		6.300	18.916	21.836	30.269
11.30	0.064	0.005	0.005	0.009		0.477	0.595	0.515	42.270		18.761	21.624	30.641
12.30	0.080	0.005	0.005	0.010	8.989	0.409	0.563			1.000	18.839	21.729	31.438
13.30	0.091	0.004	0.005	0.009	8.218	0.385	0.540	0.455	49.559		18.839	21.729	31.172
14.30	0.101	0.004	0.006	0.009	8.454	0.385	0.477			0.580	18.916	21.835	31.119
15.30	0.102	0.004	0.004	0.008		0.321	0.440	0.370	43.243		18.916	21.835	31.119
16.30	0.101	0.005	0.005	0.009	7.845	0.30.	0.422		38.952		18.451	21.210	29.605
17.17										0.280			

TIME (EST)	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	16.578	0.0	0.0	0.0
1.30	15.869	0.0	0.0	0.0
2.30	15.236	0.0	0.0	0.0
3.30	14.772	0.0	0.0	0.0
4.30	14.367	0.0	0.0	0.0
5.30	14.467	0.002	0.043	0.774
6.30	16.456	0.008	0.153	5.334
7.30	19.581	0.020	0.447	19.806
8.30	22.111	0.032	0.676	50.748
9.30	24.100	0.041	0.850	94.440
10.30	25.797	0.054	1.125	150.390
11.30	26.522	0.054	1.006	215.748
12.30	27.547	0.053	1.048	276.864
13.30	28.444	0.055	1.162	341.795
14.30	28.319	0.042	0.829	405.521
15.30	27.769	0.028	0.517	449.645
16.30	27.422	0.022	0.420	478.919
17.17	27.136	0.015	0.308	499.700
18.00	25.372	0.006	0.078	515.039
19.00	23.461	0.001	0.008	519.719
20.00	22.758	0.0	0.0	520.199
21.00	22.825	0.0	0.0	520.199
22.00	22.222	0.0	0.0	520.199
23.00	21.306	0.0	0.0	520.199

CHAMBER NO. 3
6-29-79

23 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 117 : MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	H2S PPM	SC2-M PPM	H2S-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
													14.474
0.47	0.001	0.0	0.002	0.002		0.0	0.0	0.0					14.182
1.47	0.000	0.0	0.001	0.001		0.0	0.0	0.0					13.674
2.47	0.0	0.0	0.001	0.001		0.0	0.0	0.0					13.312
3.47	0.000	0.0	0.0	0.0		0.0	0.0	0.0				0.0	12.879
4.47	0.0	0.001	0.0	0.001		0.0	0.0	0.0				2.900	12.711
5.47	0.0	0.003	0.001	0.004		1.010	0.0	0.941	0.0	1.435	3.192		13.758
6.47	0.001	0.005	0.000	0.005		0.965	0.0	0.874			2.230		15.209
7.47	0.003	0.006	0.0	0.006		0.921	0.0	0.823	0.065	1.235		3.400	15.282
8.47	0.001	0.007	0.000	0.008		0.896	0.032	0.785					15.430
9.47	0.001	0.007	0.001	0.008		0.861	0.054	0.752			2.365		15.430
10.47	0.001	0.009	0.000	0.009	9.755	0.775	0.077	0.729	0.135	1.000		4.500	15.430
11.47	0.001	0.010	0.001	0.011	9.751	0.701	0.100	0.689	0.175	1.015	2.809		15.430
12.47	0.001	0.013	0.0	0.013	9.358	0.652	0.136	0.661				0.810	15.430
13.47	0.001	0.014	0.0	0.014	9.115	0.645	0.150	0.634	0.220	0.950	5.113		15.504
14.47	0.001	0.015	0.001	0.016	8.624	0.680	0.168	0.601				0.620	15.504
15.47	0.001	0.015	0.001	0.016	8.709	0.605	0.173	0.582	0.255	0.645	2.802		15.209
16.47	0.000	0.016	0.001	0.017	8.832	0.591	0.177	0.563			4.843		
17.17												0.410	

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47	16.476	19.221	16.578	0.0	0.0	0.0
1.47	16.168	18.735	15.869	0.0	0.0	0.0
2.47	15.643	18.142	15.236	0.0	0.0	0.0
3.47	15.279	17.497	14.772	0.0	0.0	0.0
4.47	14.854	16.904	14.367	0.0	0.0	0.0
5.47	14.692	16.211	14.467	0.002	0.043	1.213
6.47	15.730	17.114	16.456	0.008	0.153	6.895
7.47	17.272	22.003	19.581	0.020	0.447	24.365
8.47	17.351	25.936	22.111	0.032	0.676	57.643
9.47	17.515	28.009	24.100	0.041	0.850	103.110
10.47	17.511	31.642	25.797	0.054	1.125	161.865
11.47	17.511	31.642	26.522	0.054	1.006	226.009
12.47	17.511	32.439	27.547	0.053	1.048	287.553
13.47	17.511	32.280	28.444	0.055	1.162	353.648
14.47	17.595	31.801	28.319	0.042	0.829	413.977
15.47	17.595	31.801	27.769	0.028	0.517	454.919
16.47	17.265	30.244	27.422	0.022	0.420	483.203
17.17			27.136	0.015	0.308	499.700
18.00			25.372	0.006	0.078	515.039
19.00			23.461	0.001	0.008	519.719
20.00			22.758	0.0	0.0	520.199
21.00			22.825	0.0	0.0	520.199
22.00			22.222	0.0	0.0	520.199
23.00			21.306	0.0	0.0	520.199

CHAMBER NO. 4
6-29-79

23 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 117 : MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	T-SUL PPM	SO2 PPM	COS PPM	SO2-M PPM	THIO-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
													14.767
0.63	0.000	0.0	0.002	0.002		0.0	0.0	0.0					14.328
1.63	0.0	0.0	0.001	0.001		0.0	0.0	0.0					13.819
2.63	0.000	0.0	0.001	0.001		0.0	0.0	0.0					13.529
3.63	0.000	0.0	0.0	0.0		0.0	0.0	0.0				0.0	13.023
4.63	0.000	0.008	0.0	0.008		0.0	0.0	0.0				2.000	12.778
5.63	0.000	0.010	0.0	0.010		1.054	0.0	0.0	0.0	1.260	4.193		13.898
6.63	0.002	0.012	0.0	0.012		1.071	0.0	0.0			6.524		15.950
7.63	0.008	0.011	0.0	0.011		1.053	0.0	0.0	0.0	1.255		3.300	16.024
8.63	0.013	0.010	0.0	0.010		1.056	0.005	0.0					16.174
9.63	0.015	0.010	0.0	0.010		1.008	0.014	0.0			8.034		16.174
10.63	0.016	0.009	0.0	0.009	10.096	0.877	0.032	0.0	0.055	1.190		3.600	16.174
11.63	0.017	0.009	0.0	0.009	10.358	0.803	0.059	0.0	0.090	1.090	16.142		16.248
12.63	0.017	0.009	0.0	0.009	9.329	0.759	0.091	0.0				0.900	16.248
13.63	0.018	0.008	0.0	0.008	9.348	0.742	0.123	0.004	0.150	0.935	17.929		16.248
14.63	0.017	0.008	0.0	0.008	9.087	0.740	0.145	0.002				0.520	16.323
15.63	0.015	0.008	0.0	0.008	8.999	0.693	0.163	0.004	0.175	0.835	20.650		15.875
16.63	0.013	0.009	0.0	0.009	9.100	0.675	0.150	0.004			20.788		
17.17												0.280	

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SH L/MIN	CU-SH LANG
0.63	16.791	19.592	16.578	0.0	0.0	0.0
1.63	16.321	19.053	15.869	0.0	0.0	0.0
2.63	15.791	18.407	15.236	0.0	0.0	0.0
3.63	15.497	17.868	14.772	0.0	0.0	0.0
4.63	14.994	17.328	14.367	0.0	0.0	0.0
5.63	14.756	16.370	14.467	0.002	0.043	1.625
6.63	15.873	17.539	16.456	0.008	0.153	8.363
7.63	18.112	22.696	19.581	0.020	0.447	28.657
8.63	18.194	26.789	22.111	0.032	0.676	64.133
9.63	18.367	28.171	24.100	0.041	0.850	111.270
10.63	18.364	31.368	25.797	0.054	1.125	172.665
11.63	18.364	32.218	26.522	0.054	1.006	235.667
12.63	18.451	32.643	27.547	0.053	1.048	297.614
13.63	18.452	31.899	28.444	0.055	1.162	364.803
14.63	18.455	30.783	28.319	0.042	0.829	421.935
15.63	18.541	30.730	27.749	0.028	0.517	459.882
16.63	18.019	29.868	27.422	0.022	0.420	487.235
17.17			27.136	0.015	0.308	499.700
18.00			25.372	0.006	0.078	515.039
19.00			23.461	0.001	0.008	519.719
20.00			22.758	0.0	0.0	520.199
21.00			22.825	0.0	0.0	520.199
22.00			22.222	0.0	0.0	520.199
23.00			21.306	0.0	0.0	520.199

CHAMBER NO. 1
7- 2-79

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 118 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SL2 PPM	CO PPM	SO2-M PPM	MMER-M PPM	T-P-S UG/M3
0.13	0.0	0.001	0.003	0.004	1.005			0.0	0.0				
1.13	0.0	0.002	0.003	0.004	0.998			0.0	0.0				
2.13	0.0	0.002	0.003	0.005				0.0	0.0				
3.13	0.0	0.002	0.003	0.005				0.0	0.0				
4.13	0.000	0.039	0.011	0.050	0.949	0.046	0.025	0.0	0.0				
5.13	0.000	0.054	0.0	0.054	9.857	0.045	0.019	1.040	0.0		0.0	1.025	4.413
6.13	0.000	0.053	0.0	0.053	9.928	0.046	0.022	1.064	0.0				
7.13	0.007	0.035	0.013	0.048	9.830	0.050	0.019	1.024	0.0		0.0	1.070	39.377
8.13	0.059	0.023	0.016	0.038	9.709	0.044	0.017	0.910	0.082				
9.13	0.138	0.0	0.016	0.016	9.522	0.045	0.020	0.718	0.228		0.260	0.460	97.833
10.13	0.194	0.010	0.011	0.021	9.566	0.043	0.009	0.615	0.315				
11.13	0.218	0.009	0.005	0.015	9.259	0.041	0.008	0.490	0.364		0.325	0.250	53.991
12.13	0.223	0.008	0.002	0.010	9.027	0.042		0.425	0.369				
13.13	0.217	0.007	0.002	0.008	8.834	0.039		0.384	0.388		0.330	0.145	37.682
14.13	0.201	0.007	0.001	0.008	8.611	0.039		0.353	0.349				
15.13	0.185	0.006	0.001	0.007	8.094	0.033		0.325	0.344		0.300	0.100	20.043
16.13	0.170	0.006	0.001	0.007	8.065	0.035		0.302	0.315				
17.13	0.157	0.006	0.001	0.007	7.558	0.033		0.282	0.315	0.002			10.173

TIME (EST)	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13		15.652	17.773	19.825	17.631	0.0	0.0	0.0
1.13		15.135	17.193	19.081	17.283	0.0	0.0	0.0
2.13		14.255	16.245	18.549	16.294	0.0	0.0	0.0
3.13		14.255	16.246	17.539	16.292	0.0	0.0	0.0
4.13		13.095	15.066	16.574	15.575	0.0	0.0	0.0
5.13	0.250	12.162	14.171	15.750	15.008	0.002	0.028	0.218
6.13	4.500	12.807	14.785	16.051	17.081	0.009	0.182	3.100
7.13		15.578	17.687	21.845	20.386	0.021	0.470	16.266
8.13	5.000	16.398	18.633	27.425	23.269	0.035	0.758	46.712
9.13		16.406	18.637	32.947	26.433	0.049	1.027	94.291
10.13	6.800	16.506	18.755	34.418	27.786	0.056	1.131	156.722
11.13		16.606	18.874	35.729	28.761	0.064	1.301	225.908
12.13	0.460	16.690	18.973	36.992	29.494	0.064	1.275	303.765
13.13		16.740	19.033	37.577	29.694	0.056	1.111	378.985
14.13	0.0	16.790	19.095	36.408	29.758	0.047	0.969	444.537
15.13		16.849	19.168	34.435	29.564	0.033	0.646	500.158
16.13		16.924	19.259	35.534	29.794	0.031	0.689	539.252
17.13	0.200	16.924	19.262	31.477	28.850	0.018	0.391	578.268
18.00					27.975	0.008	0.204	598.679
19.00					25.564	0.001	0.021	610.919
20.00					22.203	0.0	0.0	612.178
21.00					20.183	0.0	0.0	612.178
22.00					18.708	0.0	0.0	612.178
23.00					17.578	0.0	0.0	612.178

CHAMBER NO. 2
7- 2-79

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 118 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3
0.30	0.000	0.001	0.002	0.003	0.247				0.0	0.0			
1.30	0.0	0.001	0.002	0.003	0.228				0.0	0.0			
2.30	0.0	0.001	0.001	0.002					0.0	0.0			
3.30	0.0	0.002	0.001	0.004	0.222				0.0	0.0			
4.30	0.000	0.039	0.011	0.050	0.231				0.0	0.0			
5.30	0.000	0.036	0.011	0.047	8.364	0.049	0.026		0.651	0.601	0.560	3.494	0.620
6.30	0.002	0.037	0.011	0.048	8.272	0.046	0.022		0.957	1.009			2.900
7.30	0.007	0.027	0.019	0.046	8.242	0.046	0.018		0.904	0.868	0.810	8.955	
8.30	0.018	0.019	0.026	0.045	8.182	0.045	0.015		0.821	0.863			3.600
9.30	0.036	0.013	0.030	0.043	8.020	0.044	0.009		0.691	0.824	0.625	17.272	
10.30	0.060	0.009	0.030	0.039	7.981	0.041			0.615	0.824			4.200
11.30	0.090	0.006	0.028	0.034	7.908	0.039	0.007		0.510	0.718	0.540	22.125	
12.30	0.124	0.005	0.025	0.030	7.673	0.037			0.460	0.718			0.690
13.30	0.159	0.004	0.021	0.024	7.544	0.033		0.001	0.425	0.621	0.450	35.155	
14.30	0.181	0.003	0.018	0.020	7.299	0.033		0.001	0.392	0.567			0.320
15.30	0.195	0.002	0.016	0.019	6.928	0.029		0.001	0.361	0.524	0.400	33.628	
16.30	0.203	0.003	0.014	0.018				0.001	0.337	0.485			
17.30	0.203	0.002	0.015	0.016	6.444	0.027		0.001	0.314	0.446		28.220	0.200

TIME (EST)	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	15.504	17.606	19.240	17.631	0.0	0.0	0.0
1.30	15.061	17.112	19.028	17.283	0.0	0.0	0.0
2.30	14.182	16.169	18.284	16.294	0.0	0.0	0.0
3.30	14.328	16.323	17.699	16.292	0.0	0.0	0.0
4.30	13.023	14.995	16.835	15.575	0.0	0.0	0.0
5.30	12.234	14.238	15.958	15.008	0.002	0.028	0.504
6.30	13.095	15.065	17.167	17.081	0.009	0.182	4.956
7.30	15.801	17.941	21.951	20.386	0.021	0.470	21.060
8.30	16.248	18.457	26.522	23.269	0.035	0.758	54.444
9.30	16.261	18.467	31.137	26.433	0.049	1.027	104.766
10.30	16.435	18.672	32.873	27.786	0.056	1.131	168.258
11.30	16.535	18.791	33.653	28.761	0.064	1.301	239.178
12.30	16.535	18.790	34.388	29.494	0.064	1.275	316.770
13.30	16.510	18.760	34.494	29.694	0.056	1.111	390.317
14.30	16.560	18.821	33.591	29.758	0.047	0.969	454.421
15.30	16.623	18.897	32.253	29.564	0.033	0.646	506.747
16.30	16.698	18.987	33.033	29.794	0.031	0.689	546.280
17.30	16.698	18.989	30.517	28.850	0.018	0.391	582.256
18.00				27.975	0.008	0.204	598.679
19.00				25.564	0.001	0.021	610.919
20.00				22.203	0.0	0.0	612.178
21.00				20.183	0.0	0.0	612.178
22.00				18.708	0.0	0.0	612.178
23.00				17.578	0.0	0.0	612.178

CHAMBER NO. 3
7- 2-79

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 118 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	H2S PPM	SO2-M PPM	H2S-M PPM	T-P-S UG/M3
0.47	0.0	0.001	0.002	0.003	0.790			0.0	0.0	0.0			
1.47	0.0	0.001	0.001	0.002	0.767			0.0	0.0	0.0			
2.47	0.0	0.001	0.001	0.002				0.0	0.0	0.0			
3.47	0.0	0.002	0.000	0.003	0.729			0.0	0.0	0.0			
4.47	0.000	0.041	0.010	0.051	0.721	0.051	0.022	0.0	0.0	0.0			
5.47	0.000	0.041	0.008	0.049	8.648	0.051	0.023	1.040	0.0	0.920	0.0	1.065	2.819
6.47	0.001	0.045	0.007	0.051	8.607	0.050	0.023	0.988	0.0	0.847			
7.47	0.001	0.046	0.005	0.051	8.492	0.048	0.019	0.934	0.005	0.788	0.045	0.925	4.137
8.47	0.001	0.046	0.004	0.050	8.546	0.048	0.013	0.846	0.039	0.744			
9.47	0.001	0.046	0.005	0.051	8.444	0.047	0.011	0.721	0.082	0.676	0.120	0.670	4.880
10.47	0.002	0.047	0.005	0.051	8.374	0.045	0.008	0.660	0.121	0.634			
11.47	0.002	0.045	0.008	0.053	8.162	0.043	0.005	0.580	0.170	0.569	0.150	0.565	6.707
12.47	0.003	0.043	0.009	0.052	8.049	0.041		0.548	0.242	0.490			
13.47	0.003	0.038	0.012	0.050	7.556	0.037		0.527	0.306	0.415	0.280	0.410	13.207
14.47	0.004	0.034	0.015	0.049	7.419	0.033		0.504	0.378	0.342			
15.47	0.005	0.026	0.019	0.045	7.122	0.029		0.480	0.388	0.276	0.345	0.310	19.795
16.47	0.009	0.020	0.021	0.041	7.281	0.026		0.457	0.461	0.215			
17.47	0.010	0.014	0.021	0.036	6.851	0.027		0.435	0.451	0.173			44.170

TIME (EST)	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47		15.356	17.439	19.825	17.631	0.0	0.0	0.0
1.47		14.548	16.554	19.081	17.283	0.0	0.0	0.0
2.47		13.674	15.643	18.443	16.294	0.0	0.0	0.0
3.47		14.110	16.092	18.230	16.292	0.0	0.0	0.0
4.47		12.736	14.715	16.831	15.575	0.0	0.0	0.0
5.47	0.320	12.091	14.105	15.954	15.008	0.002	0.028	0.790
6.47	3.100	13.529	15.497	17.380	17.081	0.009	0.182	6.812
7.47		15.652	17.770	22.961	20.386	0.021	0.470	25.854
8.47	3.800	15.875	18.021	28.116	23.269	0.035	0.758	62.176
9.47		16.041	18.209	32.091	26.433	0.049	1.027	115.241
10.47	5.000	16.066	18.237	33.455	27.786	0.056	1.131	179.794
11.47		16.165	18.352	34.022	28.761	0.064	1.301	252.448
12.47	0.810	16.157	18.342	34.973	29.494	0.064	1.275	329.775
13.47		16.207	18.400	35.079	29.694	0.056	1.111	401.650
14.47	0.580	16.256	18.459	34.973	29.758	0.047	0.969	464.305
15.47		16.323	18.540	31.984	29.564	0.033	0.646	513.336
16.47		16.398	18.627	33.880	29.794	0.031	0.689	553.308
17.47	0.280	16.473	18.718	31.896	28.850	0.018	0.391	586.244
18.00					27.975	0.008	0.204	598.679
19.00					25.564	0.001	0.021	610.919
20.00					22.203	0.0	0.0	612.178
21.00					20.183	0.0	0.0	612.178
22.00					18.708	0.0	0.0	612.178
23.00					17.578	0.0	0.0	612.178

CHAMBER NO. 4
7- 2-79

77 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 118 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	COS PPM	SO2-M PPM	THIO-M PPM	T-P-S UG/M3
0.63	0.0	0.002	0.001	0.002	1.037			0.0	0.0	0.0			
1.63	0.0	0.001	0.002	0.003	1.037			0.0	0.0	0.0			
2.63	0.0	0.001	0.002	0.004				0.0	0.0	0.0			
3.63	0.0	0.003	0.001	0.004	1.017			0.0	0.0	0.0			
4.63	0.000	0.042	0.010	0.052	6.716	0.047	0.021	0.0	0.0	0.0			
5.63	0.0	0.048	0.006	0.054	9.128	0.048	0.023	1.341	0.0	0.0	0.0	1.860	3.175
6.63	0.005	0.037	0.016	0.053	9.050	0.046	0.020	1.331	0.0	0.0			
7.63	0.066	0.011	0.025	0.036	8.969	0.045	0.017	1.259	0.005	0.0	0.010	1.700	15.593
8.63	0.060	0.009	0.007	0.016	9.013	0.043	0.008	1.077	0.068	0.0			
9.63	0.039	0.009	0.003	0.012	8.790	0.041		0.894	0.131	0.002	0.105	1.180	48.009
10.63	0.034	0.008	0.002	0.011	8.748	0.040		0.800	0.179	0.002			
11.63	0.033	0.007	0.002	0.009	8.407	0.038		0.726	0.233	0.007	0.185	0.880	42.205
12.63	0.034	0.008	0.002	0.010	8.308	0.037		0.688	0.301	0.015			
13.63	0.033	0.006	0.008	0.014	8.106	0.035		0.666	0.325	0.017	0.290	0.695	45.161
14.63	0.032	0.006	0.003	0.009	7.770	0.035		0.647	0.354	0.020			
15.63	0.030	0.007	0.001	0.008	7.761	0.032		0.630	0.369	0.023	0.320	0.470	36.535
16.63	0.030	0.007	0.003	0.010	7.206	0.031		0.614	0.427	0.029			
17.63	0.026	0.006	0.004	0.010	7.361	0.030		0.599	0.407	0.027			31.333

TIME (EST)	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63		15.578	17.689	19.984	17.631	0.0	0.0	0.0
1.63		14.548	16.554	19.134	17.283	0.0	0.0	0.0
2.63		13.746	15.717	18.656	16.294	0.0	0.0	0.0
3.63		13.964	15.941	18.071	16.292	0.0	0.0	0.0
4.63		12.592	14.577	16.773	15.575	0.0	0.0	0.0
5.63	0.0	12.305	14.305	16.109	15.008	0.002	0.028	1.058
6.63	1.700	13.529	15.497	17.699	17.081	0.009	0.182	8.560
7.63		15.950	18.111	23.545	20.386	0.021	0.470	30.366
8.63	3.300	16.174	18.367	28.595	23.269	0.035	0.758	69.452
9.63		16.344	18.564	31.875	26.433	0.049	1.027	125.101
10.63	4.500	16.369	18.593	32.549	27.786	0.056	1.131	190.652
11.63		16.469	18.711	33.328	28.761	0.064	1.301	268.938
12.63	0.460	16.527	18.780	34.388	29.494	0.064	1.275	342.015
13.63		16.502	18.750	34.707	29.694	0.056	1.111	412.315
14.63	0.320	16.627	18.900	34.813	29.758	0.047	0.969	473.607
15.63		16.698	18.987	33.045	29.564	0.033	0.646	519.538
16.63		16.698	18.986	33.558	29.794	0.031	0.689	559.923
17.63	0.320	16.774	19.079	31.574	28.850	0.018	0.391	589.998
18.00					27.975	0.008	0.204	598.679
19.00					25.564	0.001	0.021	610.919
20.00					22.203	0.0	0.0	612.178
21.00					20.183	0.0	0.0	612.178
22.00					18.708	0.0	0.0	612.178
23.00					17.578	0.0	0.0	612.178

CHAMBER NO. 1
7- 3-79

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 119 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	AMER-M PPM	SO2-M PPM
0.13	0.000	0.0	0.005	0.005					0.0	0.0	0.0		
1.13	0.0	0.0	0.004	0.004	1.354				0.0	0.0	0.0		
2.13	0.0	0.0	0.003	0.003	1.293				0.0	0.0	0.0		
3.13	0.0	0.0	0.003	0.003	1.257				0.0	0.0	0.0		
4.13	0.000	0.058	0.0	0.058	10.012	0.349	0.162		1.018	0.0	0.0		
5.13	0.000	0.059	0.0	0.059	9.840	0.346	0.159		0.931	0.0	0.0	1.225	0.0
6.13					9.982	0.345	0.157		1.134	0.0	0.0		
7.13	0.016	0.014	0.031	0.045	9.749	0.338	0.150		1.076	0.005	0.0	1.140	0.0
8.13	0.093	0.019	0.023	0.042	9.374	0.326	0.122		0.995	0.097	0.0		
9.13	0.151	0.020	0.017	0.037	8.927	0.310	0.095	0.002				0.675	0.295
10.13	0.188	0.017	0.011	0.028									
11.13	0.206	0.015	0.007	0.021	7.097	0.267	0.048	0.003				0.445	0.345
12.13	0.208	0.012	0.003	0.015	6.036	0.227	0.031	0.001					
13.13	0.207	0.011	0.003	0.014	6.980	0.244	0.024					0.265	0.305
14.13	0.199	0.012	0.003	0.015									
15.13	0.191	0.013	0.002	0.015								0.230	0.315
16.13	0.178	0.010	0.003	0.012									
17.13	0.166	0.009	0.002	0.011									
18.13	0.151	0.008	0.002	0.010									

TIME (EST)	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPI DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SH LANG
0.13			15.875	18.029	19.624	16.589	0.0	0.0	0.0
1.13			14.914	16.951	18.620	15.586	0.0	0.0	0.0
2.13			14.255	16.245	18.467	14.800	0.0	0.0	0.0
3.13			13.529	15.498	16.720	14.136	0.0	0.0	0.0
4.13			11.734	13.777	15.086	13.383	0.0	0.0	0.0
5.13	4.960	0.320	11.093	13.206	13.943	13.097	0.002	0.026	0.203
6.13		2.000	11.651	13.702	14.510	15.347	0.009	0.213	3.221
7.13	62.486		15.455	17.548	21.579	19.686	0.022	0.494	18.193
8.13		2.400	19.079	22.060	28.010	22.922	0.036	0.774	50.017
9.13	94.397		19.411	22.518	31.518	24.992	0.049	1.010	98.298
10.13		3.600	19.274	22.325	32.847	26.178	0.061	1.230	160.614
11.13	54.422		19.137	22.134	34.654	27.089	0.069	1.365	235.467
12.13		0.360	18.528	21.307	35.557	27.989	0.071	1.404	317.671
13.13	33.557		18.374	21.101	36.833	28.342	0.069	1.372	401.661
14.13		0.250			37.364	28.717	0.060	1.240	482.951
15.13	20.390				36.678	29.583	0.047	1.025	555.674
16.13					35.947	29.728	0.035	0.790	615.340
17.13					34.685	29.319	0.020	0.425	659.894
18.13	14.108	0.320			30.499	28.208	0.008	0.178	683.467
19.00						24.786	0.002	0.016	692.759
20.00						21.456	0.0	0.0	693.719
21.00						19.814	0.0	0.0	693.719
22.00						18.711	0.0	0.0	693.719
23.00						17.628	0.0	0.0	693.719

CHAMBER NO. 2
7- 3-79

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 119 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	SO2-M PPM	T-P-S UG/M3
0.30	0.000	0.0	0.002	0.002					0.0	0.0	0.0		
1.30	0.0	0.0	0.003	0.003	0.500				0.0	0.0	0.0		
2.30	0.0	0.0	0.002	0.002	0.472				0.0	0.0	0.0		
3.30	0.0	0.0	0.002	0.002	0.446				0.0	0.0	0.0		
4.30	0.0	0.039	0.011	0.049	9.629	0.353	0.163		0.805	1.062	0.0		
5.30	0.000	0.040	0.012	0.052	9.623	0.348	0.157		0.681	0.955	0.0	0.835	4.448
6.30	0.004	0.030	0.019	0.049	9.664	0.345	0.156		0.793	0.810	0.0		
7.30	0.033	0.012	0.041	0.053	9.427	0.336	0.134		0.751	0.815	0.0	0.670	6.947
8.30	0.112	0.009	0.041	0.050	9.102	0.322	0.098	0.003	0.727	0.723	0.0		
9.30	0.213	0.007	0.040	0.047	8.270	0.293	0.060	0.011				0.510	17.845
10.30	0.286	0.007	0.034	0.041	7.796	0.279	0.035	0.015					
11.30	0.331	0.004	0.035	0.039	6.888	0.251	0.017	0.015				0.400	23.520
12.30	0.362	0.005	0.027	0.032	6.128	0.217	0.010	0.013					
13.30	0.395	0.004	0.028	0.033	5.907	0.208	0.005	0.012				0.325	23.696
14.30	0.421	0.005	0.027	0.032				0.010					
15.30	0.444	0.007	0.031	0.037				0.010				0.330	22.519
16.30	0.450	0.004	0.030	0.034				0.009					
17.30	0.448	0.003	0.029	0.032				0.008					
18.30	0.435	0.003	0.027	0.030				0.008					14.652

TIME (EST)	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30		15.504	17.606	19.164	16.589	0.0	0.0	0.0
1.30		14.621	16.633	18.586	15.586	0.0	0.0	0.0
2.30		14.037	16.017	17.530	14.800	0.0	0.0	0.0
3.30		13.240	15.209	16.154	14.136	0.0	0.0	0.0
4.30		11.591	13.648	15.081	13.383	0.0	0.0	0.0
5.30	0.250	11.164	13.268	14.045	13.097	0.002	0.026	0.468
6.30	1.500	12.144	14.155	15.786	15.347	0.009	0.213	5.394
7.30		16.192	18.395	21.738	19.686	0.022	0.494	23.232
8.30	2.100	19.004	21.959	27.266	22.922	0.036	0.774	57.912
9.30		19.101	22.049	30.802	24.992	0.049	1.010	108.600
10.30	3.800	18.965	21.900	31.784	26.178	0.061	1.230	173.160
11.30		18.829	21.715	32.368	27.089	0.069	1.365	249.390
12.30	0.690	18.374	21.104	33.059	27.989	0.071	1.404	331.991
13.30		18.297	21.002	33.963	28.342	0.069	1.372	415.655
14.30	0.460			34.229	28.717	0.060	1.240	495.599
15.30				34.395	29.583	0.047	1.025	566.129
16.30				34.195	29.728	0.035	0.790	623.398
17.30				33.199	29.319	0.020	0.425	664.229
18.30	0.210			29.492	28.208	0.008	0.178	685.282
19.00					24.786	0.002	0.016	692.759
20.00					21.456	0.0	0.0	693.719
21.00					19.814	0.0	0.0	693.719
22.00					18.711	0.0	0.0	693.719
23.00					17.628	0.0	0.0	693.719

CHAMBER NO. 3
7- 3-79

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 119 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM
0.47	0.002	0.0	0.003	0.003					0.0	0.0	0.0		
1.47	0.000	0.0	0.003	0.003	0.808				0.0	0.0	0.0		
2.47	0.0	0.0	0.002	0.002	0.740				0.0	0.0	0.0		
3.47	0.0	0.0	0.001	0.001	0.708				0.0	0.0	0.0		
4.47	0.0	0.043	0.009	0.052	10.142	0.349	0.161		0.912	0.0	1.030		
5.47	0.000	0.048	0.009	0.053	10.072	0.347	0.157		0.954	0.0	0.983	0.985	0.0
6.47	0.003	0.035	0.014	0.049	9.985	0.342	0.153		1.021	0.0	0.910		
7.47	0.022	0.016	0.037	0.053	9.851	0.333	0.120		0.939	0.029	0.817	0.885	0.060
8.47	0.072	0.011	0.040	0.051	9.454	0.313	0.074	0.007	0.924	0.126	0.715		
9.47	0.118	0.009	0.038	0.047	8.442	0.280	0.042	0.013				0.660	0.160
10.47	0.147	0.008	0.035	0.043	7.792	0.260	0.023	0.015					
11.47	0.169	0.006	0.035	0.041	7.169	0.240	0.014	0.013				0.450	0.245
12.47	0.186	0.005	0.028	0.033	6.788	0.209	0.007	0.011					
13.47	0.202	0.005	0.028	0.033	6.002	0.187		0.009				0.265	0.310
14.47	0.216	0.005	0.028	0.033				0.008					
15.47	0.224	0.006	0.032	0.039				0.008				0.285	0.395
16.47	0.222	0.004	0.032	0.036				0.007					
17.47	0.212	0.004	0.030	0.034				0.005					
18.47	0.188	0.004	0.029	0.032				0.005					

TIME (EST)	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47			14.988	17.031	19.556	16.589	0.0	0.0	0.0
1.47			14.255	16.245	18.765	15.586	0.0	0.0	0.0
2.47			13.891	15.866	18.134	14.800	0.0	0.0	0.0
3.47			12.879	14.854	16.386	14.136	0.0	0.0	0.0
4.47			11.378	13.456	15.183	13.383	0.0	0.0	0.0
5.47	2.535	0.0	11.093	13.205	14.147	13.097	0.002	0.026	0.733
6.47		1.200	12.424	14.418	16.051	15.347	0.009	0.213	7.567
7.47	3.692		16.786	19.102	22.695	19.686	0.022	0.494	28.271
8.47		1.800	19.477	22.613	28.382	22.922	0.036	0.778	65.807
9.47	5.158		19.496	22.638	30.986	24.992	0.049	1.010	118.902
10.47		3.300	19.437	22.554	31.890	26.178	0.061	1.230	185.706
11.47	12.417		19.378	22.471	32.368	27.089	0.069	1.365	263.313
12.47		1.300	18.683	21.517	33.644	27.989	0.071	1.404	346.312
13.47	16.612		18.683	21.515	34.760	28.342	0.069	1.372	429.650
14.47		0.810			35.026	28.717	0.060	1.240	508.247
15.47	19.333				35.035	29.583	0.047	1.025	576.584
16.47					34.304	29.728	0.035	0.790	631.456
17.47					32.616	29.319	0.020	0.425	668.563
18.47	14.831	0.320			28.590	28.208	0.008	0.178	687.098
19.00						24.786	0.002	0.016	692.759
20.00						21.456	0.0	0.0	693.719
21.00						19.814	0.0	0.0	693.719
22.00						18.711	0.0	0.0	693.719
23.00						17.628	0.0	0.0	693.719

CHAMBER NO. 4
7- 3-79

97 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 119 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	THIO-M PPM	SO2-M PPM
0.63	0.0	0.0	0.002	0.002					0.0	0.0	0.0		
1.63	0.0	0.0	0.002	0.002	1.385				0.0	0.0	0.0		
2.63	0.0	0.0	0.002	0.002	1.304				0.0	0.0	0.0		
3.63	0.0	0.001	0.002	0.002	1.331				0.0	0.0	0.0		
4.63	0.0	0.042	0.011	0.053	10.369	0.307	0.140		0.195	0.0	0.0		
5.63	0.001	0.043	0.010	0.053	10.450	0.339	0.154		1.010	0.0	0.0	1.150	0.0
6.63	0.010	0.024	0.026	0.050	10.417	0.337	0.146		1.019	0.0	0.0		
7.63	0.093	0.010	0.029	0.039	10.103	0.324	0.113		0.966	0.005	0.0	1.090	0.0
8.63	0.105	0.013	0.018	0.031	9.492	0.309	0.076	0.007	0.948	0.048	0.0		
9.63	0.089	0.014	0.015	0.029	8.771	0.287	0.056	0.007				0.940	0.070
10.63	0.086	0.012	0.014	0.027	8.081	0.267	0.038	0.007					
11.63	0.087	0.010	0.015	0.024	6.944	0.239	0.024	0.005				0.775	0.130
12.63	0.089	0.008	0.013	0.021	6.314	0.206	0.016	0.004					
13.63	0.091	0.008	0.014	0.022				0.002				0.495	0.150
14.63	0.093	0.009	0.013	0.022				0.002					
15.63	0.095	0.009	0.017	0.026				0.002				0.500	0.290
16.63	0.092	0.009	0.016	0.025				0.003					
17.63	0.085	0.006	0.016	0.023				0.002					
18.63	0.071	0.005	0.018	0.023				0.002					

TIME (EST)	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63			15.135	17.193	19.786	16.589	0.0	0.0	0.0
1.63			14.401	16.399	18.942	15.586	0.0	0.0	0.0
2.63			14.037	16.017	17.992	14.800	0.0	0.0	0.0
3.63			13.023	14.995	16.564	14.136	0.0	0.0	0.0
4.63			11.306	13.393	15.179	13.383	0.0	0.0	0.0
5.63	4.212	0.0	11.306	13.394	14.142	13.097	0.002	0.026	0.583
6.63		0.950	12.419	14.412	16.317	15.347	0.009	0.213	9.611
7.63	14.588		17.461	19.936	23.492	19.686	0.022	0.494	33.013
8.63		1.600	19.874	23.177	28.382	22.922	0.036	0.774	73.237
9.63	30.017		19.893	23.204	30.295	24.992	0.049	1.010	128.598
10.63		3.100	19.913	23.231	31.412	26.178	0.061	1.230	197.514
11.63	24.016		19.854	23.145	32.368	27.089	0.069	1.365	276.417
12.63		2.100	19.150	22.153	33.697	27.989	0.071	1.404	359.791
13.63	23.970		18.839	21.725	34.547	28.342	0.069	1.372	442.821
14.63		1.300			34.335	28.717	0.060	1.240	520.151
15.63	25.407				34.027	29.583	0.047	1.025	586.424
16.63					33.721	29.728	0.035	0.790	639.040
17.63					31.928	29.319	0.020	0.425	672.604
18.63	17.445	0.690			27.423	28.208	0.008	0.178	688.807
19.00						24.786	0.002	0.016	692.759
20.00						21.456	0.0	0.0	693.719
21.00						19.814	0.0	0.0	693.719
22.00						18.711	0.0	0.0	693.719
23.00						17.628	0.0	0.0	693.719

CHAMBER NO. 1
7- 5-79

93 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 120 : FKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NC PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	MMER-M PPM	SO2-M PPM	T-P-S UG/M3
0.13	0.001	0.005	0.002	0.007	0.992		0.008		0.0	0.0			
1.13	0.001	0.007	0.001	0.008	1.028		0.010		0.0	0.0			
2.13	0.001	0.006	0.002	0.009	1.080		0.008		0.0	0.0			
3.13	0.001	0.004	0.002	0.006					0.0	0.0			
4.13	0.0	0.348	0.055	0.403					1.334	0.0			
5.13	0.0	0.344	0.057	0.401					1.298	0.0	1.410		4.282
6.13	0.0	0.335	0.075	0.410					1.271	0.0			
7.13	0.001	0.290	0.107	0.398					1.189	0.0	1.255		133.597
8.13	0.005	0.201	0.173	0.374					0.967	0.063			
9.13	0.069	0.043	0.257	0.300					0.611	0.252	0.260	0.235	520.383
10.13	0.268	0.010	0.153	0.163					0.447	0.335			
11.13	0.427	0.006	0.072	0.078					0.384	0.301	0.0	0.175	482.730
12.13	0.494	0.005	0.044	0.049					0.353	0.262			
13.13	0.511	0.005	0.034	0.039	7.763	0.028			0.325	0.242	0.0	0.135	262.662
14.13	0.505	0.005	0.031	0.036	6.285	0.023		0.012	0.299	0.213			
15.13		0.004	0.027	0.030	5.751	0.021		0.009	0.279	0.194	0.0	0.135	148.300
16.13	0.463	0.004	0.025	0.028	5.919	0.021		0.008	0.258	0.170			
17.13	0.457	0.005	0.023	0.028	7.045	0.022		0.005	0.243	0.165			99.631
18.00													
19.00													
20.00													
23.00													

TIME (EST)	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13					19.208	0.0	0.0	0.0
1.13					17.861	0.0	0.0	0.0
2.13					17.619	0.0	0.0	0.0
3.13					17.458	0.0	0.0	0.0
4.13				17.593	16.275	0.0	0.0	0.0
5.13	0.250	12.162	14.172	15.041	14.394	0.001	0.020	0.156
6.13		11.805	13.842	15.041	15.792	0.008	0.177	2.581
7.13	2.600	14.255	16.244	20.091	18.292	0.020	0.463	15.431
8.13	4.200	17.989	20.610	24.608	20.322	0.036	0.768	45.590
9.13	5.000	19.621	22.818	27.425	21.656	0.048	1.000	93.480
10.13		20.333	23.844	29.758	22.761	0.059	1.193	154.985
11.13	6.300	20.413	23.960	31.069	23.350	0.066	1.310	227.478
12.13		20.413	23.958	32.699	23.997	0.071	1.406	306.842
13.13		20.413	23.957	33.484	24.417	0.067	1.342	390.807
14.13	0.750	20.413	23.958	33.272	25.300	0.059	1.238	470.516
15.13		20.333	23.839	33.857	25.656	0.047	1.029	543.166
16.13		20.333	23.840	33.112	25.831	0.033	0.763	602.830
17.13	0.280	20.333	23.843	30.986	25.450	0.019	0.452	646.184
18.00					24.775	0.008	0.206	669.779
19.00					21.161	0.001	0.022	682.139
20.00					17.117	0.0	0.0	683.458
23.00					12.919	0.0	0.0	683.458

CHAMBER NO. 2
7- 5-79

93 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 120 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	SO2-M PPM	T-P-S UG/M3	CN-S K-CN/CM3	DEWPT DEG C
0.30	0.002	0.004	0.001	0.005				0.0	0.0				
1.30	0.002	0.006	0.000	0.006	0.296			0.0	0.0				
2.30	0.002	0.005	0.001	0.006	0.336			0.0	0.0				
3.30	0.002	0.004	0.001	0.005				0.0	0.0				
4.30	0.0	0.259	0.006	0.265				1.067	1.086				
5.30	0.0	0.333	0.087	0.420				0.806	0.786	0.675	4.820		11.948
6.30	0.0	0.324	0.090	0.413				0.660	0.630				11.948
7.30	0.001	0.314	0.087	0.401				0.630	0.577	0.440	5.867	1.200	14.767
8.30	0.002	0.301	0.089	0.389				0.606	0.558			3.300	17.836
9.30	0.003	0.289	0.095	0.383				0.583	0.529	0.400	11.357	3.600	18.683
10.30	0.003	0.277	0.102	0.380				0.566	0.519				18.761
11.30	0.003	0.267	0.104	0.371				0.550	0.495	0.325	11.286	4.500	18.839
12.30	0.003	0.254	0.111	0.364				0.533	0.475				18.916
13.30	0.003	0.242	0.111	0.353	6.072	0.035	0.003	0.517	0.461	0.365	10.338		18.839
14.30	0.004	0.230	0.115	0.344	6.223	0.034	0.005	0.502	0.446			0.950	18.916
15.30	0.005	0.223	0.112	0.336	5.396	0.032	0.006	0.492	0.432	0.290	10.611		18.916
16.30	0.004	0.214	0.119	0.332	5.318	0.031	0.004	0.477	0.422				18.839
17.30	0.003	0.209	0.120	0.329	5.784	0.033	0.004	0.465	0.403		8.282	0.520	18.839
18.00													
19.00													
20.00													
23.00													

TIME (EST)	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30			19.208	0.0	0.0	0.0
1.30			17.861	0.0	0.0	0.0
2.30			17.619	0.0	0.0	0.0
3.30			17.458	0.0	0.0	0.0
4.30		17.221	16.275	0.0	0.0	0.0
5.30	13.973	14.776	14.394	0.001	0.020	0.360
6.30	13.973	15.573	15.792	0.008	0.177	4.386
7.30	16.790	20.144	18.292	0.020	0.463	20.154
8.30	20.413	23.545	20.322	0.036	0.768	53.424
9.30	21.524	26.203	21.656	0.048	1.000	103.680
10.30	21.627	28.373	22.761	0.059	1.193	167.154
11.30	21.732	28.621	23.350	0.066	1.310	240.840
12.30	21.836	29.613	23.997	0.071	1.408	321.204
13.30	21.729	30.774	24.417	0.067	1.342	404.496
14.30	21.835	30.668	25.300	0.059	1.238	483.143
15.30	21.835	31.146	25.656	0.047	1.029	553.661
16.30	21.729	30.880	25.831	0.033	0.763	610.613
17.30	21.731	28.967	25.450	0.019	0.452	650.794
18.00			24.775	0.008	0.206	669.779
19.00			21.161	0.001	0.022	682.139
20.00			17.117	0.0	0.0	683.458
23.00			12.919	0.0	0.0	683.458

CHAMBER NO. 3
7- 5-79

93 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 120 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	T-SUL PPM	SO2 PPM	H2S PPM	H2S-M PPM	SO2-M PPM	T-P-S UG/M3
0.47	0.002	0.004	0.001	0.005	0.777			0.0	0.0	0.0			
1.47	0.002	0.006	0.0	0.006	0.765			0.0	0.0	0.0			
2.47	0.002	0.006	0.001	0.008	0.783			0.0	0.0	0.0			
3.47	0.002	0.004	0.001	0.005				0.0	0.0	0.0			
4.47	0.0	0.331	0.058	0.389				1.228	0.0	1.225			
5.47	0.0	0.329	0.084	0.413				1.138	0.0	1.133	1.015		2.314
6.47	0.0	0.328	0.080	0.407				1.070	0.0	1.049			
7.47	0.0	0.334	0.061	0.395				1.018	0.029	0.965	0.815	0.045	3.788
8.47	0.0	0.349	0.038	0.387				0.980	0.078	0.867			
9.47	0.0	0.355	0.031	0.386				0.949	0.145	0.783	0.785	0.195	4.749
10.47	0.0	0.354	0.030	0.384				0.919	0.209	0.694			
11.47	0.0	0.350	0.031	0.380				0.898	0.262	0.616	0.525	0.215	7.743
12.47	0.0	0.345	0.030	0.375				0.875	0.315	0.540			
13.47	0.0	0.334	0.032	0.366	6.520	0.031	0.003	0.849	0.369	0.468	0.435	0.305	14.012
14.47	0.0	0.323	0.039	0.361	6.420	0.032			0.403	0.405			
15.47	0.0	0.311	0.039	0.350	6.022	0.027		0.799	0.436	0.347	0.280	0.355	20.373
16.47	0.0	0.303	0.041	0.344	5.478	0.025		0.779	0.456	0.312			
17.47	0.0	0.295	0.047	0.342	5.520	0.023		0.751	0.456	0.283			19.162
18.00													
19.00													
20.00													
23.00													

TIME (EST)	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47					19.208	0.0	0.0	0.0
1.47					17.861	0.0	0.0	0.0
2.47					17.619	0.0	0.0	0.0
3.47					17.458	0.0	0.0	0.0
4.47		13.601	15.571	16.476	16.275	0.0	0.0	0.0
5.47		11.520	13.584	14.669	14.394	0.001	0.020	0.564
6.47		12.091	14.105	15.839	15.792	0.008	0.177	6.191
7.47	2.500	15.135	17.192	20.835	18.292	0.020	0.463	24.877
8.47	4.800	16.924	19.269	24.290	20.322	0.036	0.768	61.258
9.47	4.800	17.075	19.452	26.734	21.656	0.048	1.000	113.880
10.47		17.151	19.543	29.167	22.761	0.059	1.193	179.322
11.47	5.000	17.227	19.638	28.884	23.350	0.066	1.310	254.202
12.47		17.151	19.543	30.036	23.997	0.071	1.408	335.565
13.47		17.227	19.636	30.933	24.417	0.067	1.342	418.184
14.47	0.900	17.151	19.541	31.571	25.300	0.059	1.238	495.771
15.47		17.227	19.635	31.465	25.656	0.047	1.024	564.157
16.47		17.227	19.636	31.093	25.831	0.033	0.763	618.395
17.47	0.620	17.227	19.638	28.435	25.450	0.019	0.452	655.405
18.00					24.775	0.008	0.206	669.779
19.00					21.161	0.001	0.022	682.139
20.00					17.117	0.0	0.0	683.458
23.00					12.919	0.0	0.0	683.458

CHAMBER NO. 4
7- 5-79

93 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 120 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	COS PPM	THIO-M PPM	SO2-M PPM
0.63	0.002	0.005	0.0	0.005	1.009				0.0	0.0	0.0		
1.63	0.001	0.005	0.001	0.006	0.992				0.0	0.0	0.0		
2.63	0.002	0.006	0.001	0.007	1.022				0.0	0.0	0.0		
3.63	0.002	0.004	0.0	0.004					0.0	0.0	0.0		
4.63	0.0	0.328	0.081	0.409					1.347	0.0	0.0		
5.63	0.0	0.320	0.086	0.406					1.292	0.0	0.0	1.750	
6.63	0.0	0.305	0.097	0.402					1.304	0.0	0.0		
7.63	0.002	0.236	0.144	0.380					1.261	0.005	0.0	1.735	
8.63	0.021	0.145	0.232	0.377					1.189	0.048	0.0		
9.63	0.127	0.023	0.205	0.228					1.080	0.179	0.0	1.330	0.175
10.63	0.256	0.009	0.087	0.096					0.966	0.339	0.0		
11.63	0.226	0.006	0.039	0.046					0.887	0.485	0.009	0.315	0.350
12.63	0.195	0.005	0.026	0.030					0.860	0.553	0.020		
13.63	0.182	0.005	0.019	0.024	6.718	0.025		0.007	0.837	0.582	0.023	0.155	0.415
14.63	0.177	0.004	0.018	0.022	6.638	0.019		0.004		0.601	0.026		
15.63	0.174	0.004	0.017	0.020	6.258	0.019		0.003	0.794	0.606	0.029	0.090	0.415
16.63	0.165	0.004	0.016	0.020	6.179	0.019		0.002	0.778	0.606	0.029		
17.63	0.153	0.003	0.015	0.018	5.760	0.018		0.002	0.763	0.601	0.032		
18.00													
19.00													
20.00													
23.00													

TIME (EST)	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63						19.208	0.0	0.0	0.0
1.63						17.861	0.0	0.0	0.0
2.63						17.619	0.0	0.0	0.0
3.63						17.458	0.0	0.0	0.0
4.63			12.449	14.440	16.370	16.275	0.0	0.0	0.0
5.63	3.375		11.022	13.142	15.148	14.394	0.001	0.020	0.756
6.63			12.234	14.238	16.583	15.792	0.008	0.177	7.891
7.63	15.096	1.200	15.504	17.604	21.366	18.292	0.020	0.463	29.321
8.63		4.800	16.398	18.635	24.396	20.322	0.036	0.768	68.630
9.63	63.264	5.000	16.473	18.722	26.734	21.656	0.048	1.000	123.480
10.63			16.548	18.810	28.899	22.761	0.059	1.193	190.775
11.63	171.931	6.000	16.623	18.900	28.828	23.350	0.066	1.310	266.778
12.63			16.623	18.899	29.661	23.997	0.071	1.408	349.082
13.63	159.081		16.548	18.809	30.349	24.417	0.067	1.342	431.067
14.63		0.580	16.623	18.898	30.721	25.300	0.059	1.238	507.656
15.63	133.521		16.623	18.898	30.614	25.656	0.047	1.029	574.035
16.63			16.623	18.899	30.083	25.831	0.033	0.763	625.720
17.63	102.691	0.360	16.623	18.901	27.474	25.450	0.019	0.452	659.744
18.00						24.775	0.008	0.206	669.779
19.00						21.161	0.001	0.022	682.139
20.00						17.117	0.0	0.0	683.458
23.00						12.919	0.0	0.0	683.458

RTI SMOG CHAMBER STUDY
RUN 121 : EKMA/NOX/MULTISULFUR

CHAMBER NO. I
7- 6-79

84 % SUNSHINE

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	SO2-W PPM	HMER-W PPM	T-P-S UG/M3
									0.0	0.0			
0.13	0.0	0.003	0.005	0.008					0.0	0.0			
1.13	0.0	0.002	0.004	0.006					0.0	0.0			
2.13	0.0	0.003	0.004	0.006	3.954	0.003	0.003		0.0	0.0			
3.13	0.0	0.313	0.0	0.313	3.898	0.237	0.110		1.192	0.0			
4.13	0.0	0.333	0.056	0.388	13.734	0.338	0.155		1.191	0.0	0.0	1.190	0.0
5.13	0.0	0.326	0.090	0.415	13.724	0.369	0.169		1.176	0.024			
6.13	0.0	0.317	0.096	0.413	13.546	0.363	0.167		1.109	0.015	0.0	0.985	126.743
7.13	0.002	0.251	0.146	0.397	13.348	0.356	0.151		0.900	0.102			
8.13	0.013	0.122	0.244	0.366	13.309	0.348	0.120		0.635	0.291	0.230	0.160	459.270
9.13	0.188	0.015	0.247	0.262	13.142	0.327	0.067	0.015	0.493	0.354			
10.13	0.479	0.004	0.120	0.125	12.403	0.288	0.020	0.049	0.453	0.388	0.190	0.0	100.292
11.13	0.553	0.003	0.089	0.093	11.933	0.271	0.008	0.056	0.419				
12.13	0.579	0.004	0.078	0.082	10.959	0.239	0.003	0.036	0.386		0.195	0.0	
13.13	0.609	0.003	0.072	0.075	10.451	0.222		0.032	0.355				
14.13	0.626	0.003	0.066	0.069					0.329		0.170	0.0	
15.13	0.631	0.002	0.059	0.061					0.305				
16.13	0.613	0.002	0.055	0.057	9.770	0.200		0.021	0.294				72.050
17.13	0.597	0.002	0.053	0.055	9.481	0.189		0.019					

TIME (EST)	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.13		10.316	12.539	14.301	12.061	0.0	0.0	0.0
1.13		9.776	12.094	14.021	11.842	0.0	0.0	0.0
2.13		10.438	12.642	13.953	13.017	0.0	0.0	0.0
3.13		9.883	12.182	12.973	12.589	0.0	0.0	0.0
4.13	0.0	9.301	11.715	12.083	12.019	0.0	0.0	0.0
5.13		9.495	11.869	12.096	12.453	0.001	0.030	0.234
6.13	2.100	9.619	11.967	12.694	13.994	0.009	0.209	3.430
7.13	1.800	11.876	13.905	16.284	16.839	0.021	0.473	18.029
8.13		14.548	16.551	22.854	19.158	0.034	0.735	48.453
9.13		14.767	16.784	27.266	20.608	0.049	1.014	94.729
10.13		14.767	16.782	29.224	21.756	0.057	1.155	156.669
11.13	1.500	14.767	16.781	30.313	22.689	0.061	1.215	220.437
12.13		14.694	16.701	31.784	23.594	0.067	1.349	300.382
13.13		14.767	16.780	32.049	24.033	0.065	1.338	381.236
14.13		14.767	16.779	33.591	24.592	0.055	1.144	460.002
15.13		14.767	16.780	32.262	24.875	0.040	0.852	526.365
16.13	0.210	14.767	16.782	29.658	24.989	0.029	0.675	576.104
17.13		14.767	16.782	30.189	24.478	0.018	0.475	615.043
18.00					23.669	0.008	0.178	639.839
19.00					21.275	0.001	0.020	650.519
20.00					18.350	0.0	0.0	651.719
21.00					16.508	0.0	0.0	651.719
22.00					15.458	0.0	0.0	651.719
23.00					14.583	0.0	0.0	651.719

CHAMBER NO. 2
7- 6-79

84 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 121 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	SO2-M PPM	T-P-S UG/M3	CN-5 K-CN/CM3
0.30	0.0	0.002	0.004	0.006					0.0	0.0			
1.30	0.0	0.002	0.002	0.004					0.0	0.0			
2.30	0.0	0.002	0.003	0.005	2.942				0.0	0.0			
3.30	0.0	0.297	0.0	0.297	2.938	0.031	0.015		0.0	0.0			0.0
4.30	0.0	0.296	0.073	0.369	12.792	0.347	0.159		1.030	1.057			
5.30	0.0	0.314	0.081	0.395	12.525	0.366	0.166		0.849	0.839	0.775	0.0	
6.30	0.0	0.300	0.092	0.393	12.617	0.365	0.165		0.766	0.727			1.800
7.30	0.002	0.264	0.112	0.376	12.413	0.358	0.150		0.764	0.694	0.560	2.330	1.600
8.30	0.005	0.223	0.143	0.366	12.372	0.352	0.131		0.757	0.674			
9.30	0.010	0.177	0.181	0.358	12.199	0.343	0.111		0.745	0.655	0.510	6.015	
10.30	0.021	0.125	0.215	0.339	11.337	0.319	0.088	0.001	0.718	0.635			1.300
11.30	0.041	0.084	0.243	0.327	10.777	0.302	0.071	0.005	0.697	0.601	0.360	8.822	1.300
12.30	0.070	0.048	0.257	0.305				0.004	0.675				
13.30	0.115	0.026	0.258	0.284	9.897	0.275	0.039	0.006	0.647		0.365		
14.30	0.167	0.018	0.238	0.256					0.615				
15.30	0.201	0.009	0.219	0.228					0.587		0.345		
16.30	0.215	0.009	0.198	0.208	8.515	0.234	0.014	0.011	0.559				0.580
17.30	0.222	0.007	0.181	0.189	8.935	0.241	0.008	0.011	0.539			18.423	

TIME (EST)	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.30	10.038	12.308	13.829	12.061	0.0	0.0	0.0
1.30	9.710	12.040	13.549	11.842	0.0	0.0	0.0
2.30	10.442	12.645	14.225	13.017	0.0	0.0	0.0
3.30	9.880	12.179	13.454	12.589	0.0	0.0	0.0
4.30	9.298	11.712	12.510	12.019	0.0	0.0	0.0
5.30	9.563	11.922	12.683	12.453	0.001	0.030	0.540
6.30	9.969	12.251	13.600	13.994	0.009	0.209	5.562
7.30	12.664	14.644	16.390	16.839	0.021	0.473	22.854
8.30	15.135	17.191	22.057	19.158	0.034	0.735	55.950
9.30	15.727	17.853	25.671	20.608	0.049	1.014	105.072
10.30	15.504	17.599	27.253	21.756	0.057	1.155	168.450
11.30	15.652	17.765	28.821	22.689	0.061	1.215	238.830
12.30	15.652	17.764	29.658	23.594	0.067	1.349	314.141
13.30	15.652	17.765	28.967	24.033	0.065	1.338	394.883
14.30	15.727	17.848	30.614	24.592	0.055	1.144	471.671
15.30	15.652	17.766	27.904	24.875	0.040	0.852	535.055
16.30	15.652	17.765	28.648	24.989	0.029	0.675	582.989
17.30	15.727	17.850	28.382	24.478	0.018	0.475	619.888
18.00				23.669	0.008	0.178	639.839
19.00				21.275	0.001	0.020	650.519
20.00				18.350	0.0	0.0	651.719
21.00				16.508	0.0	0.0	651.719
22.00				15.458	0.0	0.0	651.719
23.00				14.583	0.0	0.0	651.719

CHAMBER NO. 3
7- 6-79

84 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 121 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	H2S PPM	SO2-M PPM	H2S-M PPM
0.47	0.0	0.002	0.004	0.006					0.0	0.0	0.0		
1.47	0.0	0.002	0.003	0.004					0.0	0.0	0.0		
2.47	0.0	0.003	0.002	0.005	3.709				0.0	0.0	0.0		
3.47	0.0	0.308	0.0	0.308	3.676				0.0	0.0	0.0		
4.47	0.0	0.308	0.074	0.382	13.827	0.336	0.155		1.085	0.0	1.069		
5.47	0.0	0.313	0.081	0.394	13.809	0.369	0.169		1.043	0.0	1.017	0.0	1.035
6.47	0.0	0.304	0.087	0.391	13.737	0.365	0.163		1.004	0.005	0.945		
7.47	0.002	0.264	0.109	0.374	13.569	0.359	0.142		0.980	0.034	0.867	0.050	0.770
8.47	0.005	0.206	0.155	0.361	13.575	0.348	0.106		0.966	0.087	0.780		
9.47	0.013	0.133	0.200	0.333	12.908	0.326	0.074	0.003	0.952	0.155	0.694	0.140	0.570
10.47	0.025	0.070	0.223	0.293	12.092	0.301	0.046	0.007	0.921	0.218	0.607		
11.47	0.073	0.034	0.226	0.261	11.269	0.271	0.029	0.011	0.898	0.276	0.529	0.230	0.460
12.47	0.127	0.019	0.206	0.225	10.414	0.247	0.015	0.012	0.870				
13.47	0.183	0.011	0.181	0.192	10.837	0.242	0.008	0.149	0.839			0.320	0.295
14.47	0.236	0.007	0.155	0.163					0.806				
15.47	0.258	0.005	0.135	0.141					0.775			0.305	0.250
16.47	0.261	0.005	0.121	0.126	7.491	0.213		0.018	0.748				
17.47	0.258	0.005	0.108	0.113	9.800	0.204		0.019	0.726				

TIME (EST)	T-P-S UG/M3	CN-5 K-CN/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.47			9.759	12.080	14.261	12.061	0.0	0.0	0.0
1.47			9.573	11.930	14.140	11.842	0.0	0.0	0.0
2.47			10.517	12.709	14.178	13.017	0.0	0.0	0.0
3.47			9.736	12.062	13.562	12.589	0.0	0.0	0.0
4.47		0.0	9.154	11.598	13.150	12.019	0.0	0.0	0.0
5.47	0.0		9.771	12.091	12.526	12.453	0.001	0.030	0.846
6.47		2.000	10.249	12.483	13.761	13.994	0.009	0.209	7.694
7.47	1.971	3.400	13.168	15.135	19.081	16.839	0.021	0.473	27.679
8.47			15.061	17.108	23.439	19.158	0.034	0.735	63.447
9.47	0.0		15.356	17.433	26.788	20.608	0.049	1.014	115.415
10.47		3.100	15.356	17.432	27.886	21.756	0.057	1.155	180.231
11.47	6.798	2.600	15.430	17.514	29.135	22.689	0.061	1.215	251.223
12.47			15.430	17.512	30.508	23.594	0.067	1.349	327.901
13.47			15.356	17.430	30.349	24.033	0.065	1.338	408.531
14.47			15.430	17.511	31.624	24.592	0.055	1.144	483.340
15.47			15.430	17.514	28.435	24.875	0.040	0.852	543.745
16.47		0.320	15.504	17.598	28.116	24.989	0.029	0.675	589.874
17.47	20.552		15.504	17.597	28.595	24.478	0.018	0.475	624.733
18.00						23.669	0.008	0.178	639.839
19.00						21.275	0.001	0.020	650.519
20.00						18.350	0.0	0.0	651.719
21.00						16.508	0.0	0.0	651.719
22.00						15.458	0.0	0.0	651.719
23.00						14.583	0.0	0.0	651.719

CHAMBER NO. 4
7- 6-79

84 % SUNSHINE

RTI SMOG CHAMBER STUDY
RUN 121 : EKMA/NOX/MULTISULFUR

TIME (EST)	OZONE PPM	NO PPM	NO2 PPM	NOX PPM	CH4 PPM	N-BUT PPM	C3H6 PPM	PAN PPM	T-SUL PPM	SO2 PPM	COS PPM	SO2-M PPM	THIO-M PPM
0.63	0.0	0.002	0.002	0.005					0.0	0.0	0.0		
1.63	0.0	0.002	0.001	0.004					0.0	0.0	0.0		
2.63	0.0	0.003	0.002	0.005	4.176	0.002			0.0	0.0	0.0		
3.63	0.0	0.311	0.0	0.311	14.207				0.0	0.0	0.0		
4.63	0.0	0.309	0.074	0.383	14.215	0.337	0.153		1.247	0.0	0.0		
5.63	0.0	0.315	0.084	0.399	13.987	0.366	0.166		1.246	0.0	0.0	0.0	1.710
6.63	0.0	0.288	0.105	0.393	14.110	0.366	0.162		1.256	0.0	0.0		
7.63	0.006	0.178	0.188	0.366	13.618	0.352	0.137		1.235	0.010	0.0	0.020	1.580
8.63	0.062	0.049	0.265	0.314	13.577	0.340	0.098	0.004	1.189	0.048	0.0		
9.63	0.235	0.018	0.202	0.220	12.921	0.313	0.048	0.022	1.113	0.126	0.0	0.090	1.125
10.63	0.371	0.013	0.110	0.123	12.512	0.281	0.015	0.050	1.030	0.247	0.003		
11.63	0.327	0.012	0.088	0.101	11.338	0.244	0.007	0.054	0.991	0.344	0.0	0.260	0.260
12.63	0.304	0.011	0.077	0.088	11.059	0.227	0.008	0.036	0.968				
13.63	0.299	0.010	0.069	0.079	10.563	0.207		0.033	0.945			0.325	0.325
14.63	0.302	0.008	0.061	0.070					0.921				
15.63	0.286	0.008	0.056	0.064					0.897			0.360	0.360
16.63	0.265	0.007	0.053	0.060		0.171		0.021	0.891				
17.63	0.245	0.009	0.050	0.058	9.971	0.177		0.019	0.879				

TIME (EST)	T-P-S UG/M3	CH-S K-ON/CM3	DEWPT DEG C	H2O K-PPM	CTEMP DEG C	TEMP DEG C	UV L/MIN	SR L/MIN	CU-SR LANG
0.63			9.834	12.140	14.533	12.061	0.0	0.0	0.0
1.63			9.577	11.933	14.306	11.842	0.0	0.0	0.0
2.63			10.522	12.712	14.397	13.017	0.0	0.0	0.0
3.63			9.663	12.002	13.724	12.589	0.0	0.0	0.0
4.63		0.0	9.222	11.651	13.206	12.019	0.0	0.0	0.0
5.63	0.0		9.769	12.089	12.581	12.453	0.001	0.030	1.134
6.63		1.100	10.458	12.659	14.029	13.994	0.009	0.209	9.700
7.63	10.103	1.200	14.037	16.015	19.931	16.839	0.021	0.473	32.219
8.63			17.531	20.023	23.917	19.158	0.034	0.735	70.503
9.63	47.626		18.451	21.213	27.000	20.608	0.049	1.014	125.149
10.63		0.950	18.451	21.212	28.147	21.756	0.057	1.155	191.319
11.63	86.277	0.750	18.528	21.313	29.662	22.689	0.061	1.215	262.887
12.63			18.451	21.210	29.711	23.594	0.067	1.349	340.852
13.63			18.451	21.210	30.295	24.033	0.065	1.338	421.376
14.63			18.451	21.210	29.870	24.592	0.055	1.144	494.322
15.63			18.451	21.212	28.116	24.875	0.040	0.852	551.925
16.63		0.410	18.451	21.212	27.904	24.989	0.029	0.675	596.354
17.63	131.808		17.760	20.310	28.169	24.478	0.018	0.475	629.293
18.00						23.669	0.008	0.178	639.839
19.00						21.275	0.001	0.020	650.519
20.00						18.350	0.0	0.0	651.719
21.00						16.508	0.0	0.0	651.719
22.00						15.458	0.0	0.0	651.719
23.00						14.583	0.0	0.0	651.719